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United States  
Circuit Court of Appeals

Vol  
2003

For the Ninth Circuit.

SILVER LINE, LIMITED, Owner and operator of the British Motorship "SILVERPALM", and the British Motorship "SILVERPALM", her engines, tackle, apparel, furniture, etc.,

Appellants.

vs.

UNITED STATES OF AMERICA, Owner and operator of the Cruiser "CHICAGO", UNITED STATES OF AMERICA, ETHEL G. MAC EARLANE, as Administratrix, MARIAN B. CHAPPELLE, as Administratrix, JOSEPH A. OEHLERS, LOUIS GIARD, and BANK OF AMERICA NATIONAL TRUST & SAVINGS ASSOCIATION, as Special Administrator,

Appellees.

**Apostles on Appeal**

In Three Volumes

**VOLUME I**

Pages 1 to 576

Upon Appeal from the District Court of the United States for the Northern District of California, Southern Division.

JUN 15 1936

PAUL P. O'BRIEN,

CLERK



**United States**  
**Circuit Court of Appeals**

**For the Ninth Circuit.**

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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

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In the Southern Division of the United States  
District Court for the Northern District of  
California.

No. 21666-L

UNITED STATES OF AMERICA, et al.,  
Libelants,

vs.

British Motorship "SILVERPALM," her engines,  
tackle, apparel, furniture, etc.,  
Respondents,

SILVER LINE, LIMITED,  
Claimant,

SILVER LINE, LIMITED, Owner and Operator  
of the British Motorship "Silverpalm,"  
Cross-Libelant,

vs.

UNITED STATES OF AMERICA, Owner and  
Operator of the Cruiser "CHICAGO," et al,  
Cross-Respondents.

## APPEARANCES:

For Appellant, Silver Line, Limited:—

LILLICK, OLSON, LEVY & GEARY

IRA S. LILLICK, Esq.,

JOSEPH J. GEARY, Esq.,

San Francisco, Calif.

For Appellees, The United States of America:—

H. H. McPIKE,

U. S. Attorney

ROBERT L. McWILLIAMS,

Assistant U. S. Attorney

ESTHER B. PHILLIPS,

Assistant U. S. Attorney,

San Francisco, Calif.

In the Southern Division of the United States  
District Court for the Northern District of  
California.

No. 21666-S

UNITED STATES OF AMERICA,

Libelant,

vs.

Motor Boat "SILVERPALM," her engines, tackle,  
apparel, and furniture,

Respondents.

### LIBEL

To the Honorable Judges of the United States Dis-  
trict Court for the Northern District of Cali-  
fornia:

The libel of the United States of America, a  
sovereign state, in a cause of collision, civil and  
maritime, against the Motor Boat "SILVER-  
PALM", her engines, tackle, apparel and furniture,  
alleges:

#### I.

That at all times herein mentioned the Libelant,  
UNITED STATES OF AMERICA, a sovereign  
state, was and is the owner of the Cruiser "CHI-  
CAGO", an armed vessel of approximately 9,300  
gross tons, which was, at the time hereinafter men-  
tioned, used by said libelant's Department of the  
Navy.

#### II.

That the "SILVERPALM" at all times herein  
mentioned was a motorship registered, bearing the

British Registry No. 161341, of approximately 6,373 gross tonnage, and owned by Silver Line, Ltd., a corporation duly organized and existing under and by virtue of the laws of the Kingdom of Great Britain, and, as libelant alleges on information and belief, operated by the General Steamship Corporation, a California corporation. [1\*]

That said "SILVERPALM" is now within the Port of San Francisco, Northern District of California, Southern Division, and is within the jurisdiction of this Honorable Court.

### III.

That on or about the 24th day of October, 1933, at or about the hour of 8:06 o'clock A. M. of said day, while the motorship "SILVERPALM" was proceeding from the Port of San Francisco, California, to the Port of New Orleans, Louisiana, bound on a voyage to South Africa, at a point in the Pacific Ocean offshore from Point Sur, California, the said American cruiser "CHICAGO" was proceeding on a voyage from San Pedro, California, to San Francisco Bay, and while so proceeding the said motorship "SILVERPALM" negligently and carelessly collided and came into contact with said cruiser "CHICAGO", damaging both vessels as hereinafter set forth.

### IV.

That the said cruiser "CHICAGO" was in all respects seaworthy and properly equipped, supplied

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\*Page numbering appearing at the foot of page of original certified Transcript of Record.

and manned with a full complement of duly qualified officers and crew, and was at all the times herein mentioned being properly navigated, and had proper and competent officers on watch, and was maintaining proper and efficient watchmen and lookouts, and was observing all the rules and regulations applicable to the said vessel under the then existing conditions.

V.

That said cruiser "CHICAGO" was guilty of no fault or negligence in the premises, and that the collision and the resulting damage received by the said cruiser "CHICAGO" were due entirely to the carelessness and negligence of said motorship "SILVERPALM" while owned and operated as above set [2] forth.

That said negligence on the part of the officers and crew of the said motorship "SILVERPALM" consisted of the following:

(1) That the "SILVERPALM" did not maintain a proper lookout;

(2) That she was proceeding immediately prior to and at the time of said collision at an excessive rate of speed under the existing conditions;

(3) That she was not sounding proper fog signals;

(4) That she was not seaworthy in that her engines were not properly *construed*, and in that she was unable to reverse her engines while proceeding ahead;

(5) That her engines were improperly, defectively and negligently constructed, particularly in that until she was stopped in the water she could not maneuver or use any power in backing;

(6) That immediately prior to the collision she executed a maneuver in turning her course to port, which brought her into direct collision with the "CHICAGO".

(7) That she was negligent in other respects, as to which the libelant is not at present informed, and as to which the libelant begs leave of court to amend its libel and specify such other acts of negligence when libelant is so informed.

## VI.

That as a result of said collision damages were suffered by said cruiser "CHICAGO" as follows. She was struck by the bow of the "SILVER-PALM" with such violence that a hole was cut in her port side approximately 40 feet in width and 20 feet in depth from her upper deck line to the water's edge. Libelant is at present unable to state with accuracy the cost [3] of labor and materials for effecting the necessary repairs to the cruiser "CHICAGO", but on information and belief the libelant avers that the cost of labor and materials will amount to approximately \$300,000.00.

## VII.

That a certain period of time will be required in order to effect said repairs and that during said

period of time libelant will be obliged to retain the officers and crew of the cruiser "CHICAGO" in its employ and will be obliged to pay them certain sums in wages and subsistence. That Libelant will also lose the use and benefit of their services during said period of repairs on account of said collision. Libelant is unable at this time to allege what said sums will aggregate and asks leave when such sums are ascertained to amend this libel accordingly.

WHEREFORE, libelant prays that process in due form of law according to the rules and practice of this Honorable Court in causes of admiralty and maritime jurisdiction may issue against the said motorship "SILVERPALM", her boilers, engines, tackle, etc., and against all persons having or claiming any interest therein; that they may be cited to appear and answer all and singular the matters aforesaid; that a decree may be entered herein in favor of libelant against the said motorship "SILVERPALM", her engines, etc., for the amount of damages set forth herein and as may hereinafter be alleged, with interest and costs; that said motorship "SILVERPALM" be condemned and sold to pay the same, and for such other relief as may be just.

H. H. McPIKE,

United States Attorney

ROBT. L. McWILLIAMS

Asst. United States Attorney

ESTHER B. PHILLIPS

Asst. United States Attorney

[Endorsed]: Filed November 1, 1933. [4]

## MONITION—21666-S.

Northern District of California, ss:

The President of the United States of America to  
the Marshal of the United States for the North-  
ern District of California—Greeting:

Whereas, a Libel hath been filed in the Southern Division of the United States District Court for the Northern District of California, on the 1st day of November, in the year of our Lord one thousand nine hundred and 33 by The United States of America against the Motor Boat "Silverpalm", her tackle, apparel, and furniture, engines in a cause of Collision for \$300,000.00, civil and maritime for the reasons and causes in the said Libel mentioned, and praying the usual process and monition of the said Court in that behalf to be made, and that all persons interested in the said vessel, her tackle, etc., may be cited in general and special to answer the premises, and all proceedings being had that the said vessel, her tackle, etc., may for the causes in the said Libel mentioned, be condemned and sold to pay the demands of the Libelant,

YOU ARE THEREFORE HEREBY COM-  
MANDED to attach the said vessel, her tackle, etc., and to retain the same in your custody until the further order of the Court respecting the same and to give due notice to all persons claiming the same, or knowing or having anything to say why the same should not be condemned and sold pursuant to the prayer of the said Libel, that they be and appear

before the said Court, to be held in and for the Northern District of California, on the 14th day of November, A. D. 1933, at 10 o'clock in the forenoon of the same day, if that day shall be a day of jurisdiction, otherwise on the next day of jurisdiction thereafter, then and there to interpose a claim for the same, and to make their allegations on that behalf.

And what you shall have done in the premises do you then and there make return thereof, together with this writ.

Witness, the Honorable A. F. ST. SURE, Judge of said Court, at the City and County of San Francisco, in the Northern District of California, this 1st day of November in the year of our Lord one thousand nine hundred and 33.

[Seal]                      WALTER B. MALING

Clerk.

By C. W. CALBREATH

Deputy Clerk.

H. H. McPIKE, U. S. Attorney

Proctor for Libelant

[Endorsed]: Filed November 2, 1933. [5]

---

MARSHAL'S RETURN.

In obedience to the within Monition, I attached the Motor Boat "Silverpalm" therein described, on the 1st day of November, 1933, and have given due notice to all persons claiming the same that this

Court will, on the 14th day of November, 1933 (if that day be a day of jurisdiction, if not, on the next day of jurisdiction thereafter), proceed to trial and condemnation thereof, should no claim be interposed for the same. I further return that I posted a notice of seizure on the herein-named "Silverpalm". I further return that I handed to and left with Captain B. T. Cox a copy of this Writ, at San Francisco, Calif., this 1st day of November, 1933.

GEORGE VICE

United States Marshal.

By C. L. JACKSON

Deputy.

San Francisco, Calif., November 2, 1933.

---

[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Tuesday, the 14th day of November, in the year of our Lord one thousand nine hundred and thirty-three.

PRESENT: the Honorable A. F. ST. SURE, District Judge.

[Title of Cause—No. 21666.]

PROCLAMATION.

This cause came on regularly this day for Proclamation upon the Libel filed and the Monition issued.

On motion of A. J. Zirpoli, Esq., Asst. U. S. Atty., and on order of Court, Proclamation was duly made. Further ordered that Claimant have ten (10) days within which to plead. [6]

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[Title of Court and Cause—No. 21666-S.]

AMENDED LIBEL IN REM.

To the Honorable Judges of the United States District Court for the Northern District of California:

The Amended Libel of the UNITED STATES OF AMERICA, a sovereign state, ETHEL G. MacFARLANE, as Administratrix, MARIAN B. CHAPPELLE, as Administratrix, JOSEPH A. OEHLERS, and LOUIS GIARD, in a cause of collision, civil and maritime, against the Motorship "SILVERPALM" alleges:

That at all times mentioned herein the libelant, the UNITED STATES OF AMERICA, a sovereign state, was and is the owner of the Cruiser "CHICAGO", which was at the times hereinafter mentioned, used by said libelant's Department of the Navy. Said libelant sues for itself and in behalf of officers and members of the crew of the "CHICAGO" on account of damages suffered in the collision hereinafter described, and also in behalf of the widow and minor children of JOHN W. TROY. [7]

## II.

At the time of the collision hereinafter described, FREDERICK S. CHAPPELLE was an officer of the Cruiser "CHICAGO" and on board her at the time of the collision, holding a commission as First Lieutenant in the United States Marine Corps. On that day his legal residence was Waterloo, Seneca County, State of New York. He was killed by the collision. Libelant, MARIAN B. CHAPPELLE is his widow, his next of kin, and his sole heir-at-law. On November 6, 1933, the Surrogate Court of Seneca County, State of New York, thereunto duly authorized, appointed the libelant, MARIAN B. CHAPPELLE, administratrix of his estate. She thereupon qualified and is now the duly acting authorized and qualified administratrix of the Estate of FREDERICK S. CHAPPELLE.

## III.

At the time of the collision hereinafter described, HAROLD A. MacFARLANE was an officer of the Cruiser "CHICAGO", and on board her at the time of said collision, holding a commission as a lieutenant in the United States Navy, Junior Grade. On that day his legal residence was Haverhill, Essex County, State of Massachusetts. He was killed by the collision. Libelant, ETHEL G. MacFARLANE, is his mother, his next of kin, and his sole heir-at-law. On November 10, 1933, ETHEL G. MacFARLANE, was appointed administratrix of the Estate of HAROLD A. MacFARLANE by the Probate

Court of Essex County, Massachusetts, thereunto duly authorized. That thereafter she duly qualified, and is now the duly authorized and acting administratrix of the Estate of HAROLD A. MacFARLANE. [8]

IV.

At the time of the collision hereinafter mentioned, JOHN W. TROY was an officer of the Cruiser "CHICAGO", and was on board her at the time of the collision. He was employed in the United States Department of the Navy, and had the status of Chief Pay Clerk. He was killed by the collision.

V.

At the time of the Collision hereinafter described, the libelants JOSEPH A. OEHLERS and LOUIS GIARD were members of the United States Navy, and were on board the Cruiser "CHICAGO", and as members of her crew JOSEPH OEHLERS had the rating of machinist, and LOUIS GIARD was an electrician.

VI.

The respondent Motorship "SILVERPALM" is a vessel under British Registry of approximately 6373 gross tonnage; 450.9 feet in length; 61.3 feet in beam and 25.3 feet depth of hold, bearing British Registry No. 161341.

On information and belief the libelants allege that said Motorship "SILVERPALM" is owned by the Silver Line, Ltd., a corporation, organized under the laws of the Kingdom of Great Britain, and that

she is operated by the General Steamship Corporation, a California corporation, with its principal place of business in San Francisco, California. Said vessel is now lying in the waters of San Francisco Bay and within the jurisdiction of this Honorable Court.

#### VII.

That on the 24th day of October, 1933, the Motorship "SILVERPALM", owned and operated as aforesaid, negligently and carelessly collided with the Cruiser "CHICAGO", causing damage to the vessel as hereinafter set forth. As a result of this collision, Lieutenant Frederick S. Chappelle, Lieutenant Harold A. MacFarlane and Chief Pay Clerk John W. Troy were killed, and the libelants Joseph A. Oehlers and Louis Giard were injured. [9]

#### VIII.

The Cruiser "CHICAGO" was in all respects seaworthy, properly equipped and supplied and fully manned with competent and duly qualified officers and crew. She was at all times mentioned herein navigated properly, with proper and competent officers on duty and on watch, and was maintaining an efficient and proper look-out. She observed all the rules and regulations applicable to her under the existing conditions. The "CHICAGO" committed no fault or negligence, and the collision was due solely to the carelessness and negligence of the "SILVERPALM", and that of her officers and crew.

## IX.

Libelants allege that the collision occurred under the following circumstances:

The "CHICAGO" was proceeding on a course 350° true at 8:00 o'clock on the morning of October 24, 1933. The wind was approximately force 3 (Beaufort scale) and northwesterly. There was a fog of varying density. The "CHICAGO" was proceeding at a moderate speed and observing due caution under the conditions. Very shortly after 8:00 o'clock A. M. the navigating officers of the "CHICAGO" heard the fog horn of a vessel on the "CHICAGO'S" starboard bow. The "CHICAGO'S" engines were slowed, then stopped. A freighter was then seen 2 points on the "CHICAGO'S" starboard bow on a course slightly converging. The "CHICAGO'S" rudder was put left to bring her to a course of 330° true in order to parallel the course of the vessel seen on her starboard bow. The "CHICAGO" had come, or almost come, to her new course of 330° true and her engines had been put ahead, and she was going at a moderate rate of speed, when a vessel, which later proved to be the respondent [10] "SILVERPALM", was seen approximately 2 points on the "CHICAGO'S" port bow, coming out of a fog at full speed on a course converging with the "CHICAGO'S" course. No signals from the "SILVERPALM" had been heard by the "CHICAGO'S" officers prior to seeing her. On seeing the "SILVERPALM", the navi-

gators of the "CHICAGO" immediately put her engines full astern, and she was given a full right rudder. The "SILVERPALM" came on without substantially reducing her speed, and without changing her course until immediately prior to the collision. She struck the "CHICAGO" on her port side at an angle between 30° and 45°. The moment of impact was at 7 Minutes, 10 Seconds after 8:00 o'clock A. M., according to the "CHICAGO'S" time.

At the moment of impact, the "CHICAGO" was slowly moving ahead in the water under 5 knots per hour, and the "SILVERPALM" was moving at approximately 12 knots per hour. The "CHICAGO'S" maneuver of reversing her engines and turning to her starboard was designed to minimize, and did minimize, the damage caused by the collision. The collision occurred on the high seas, more than a marine league from the shore of any State, the District of Columbia, or any territories or dependencies of the United States.

#### X.

Libelants allege that the Motorship "SILVERPALM", her owners, officers and crew were negligent in the following respects at and prior to the time of the collision and that their negligence caused the collision, to-wit:

(1) The "SILVERPALM" did not maintain a proper lookout.

(2) She did not have competent officers on watch attending to their duties. [11]

(3) Prior to the collision, she was not sounding proper fog signals.

(4) She was proceeding in the fog at a rate of speed which did not permit her to come to a stop or to maneuver within the limits of visibility at that time and place.

(5) Said vessel was improperly, defectively and negligently constructed, particularly in that until said vessel was stopped in the water she could not put her engines in reverse or use any engine or other mechanical power to check her speed or bring her to a stop.

(6) Said vessel was proceeding at an excessive rate of speed under the existing weather conditions in consideration of the fact that she was so constructed that until said vessel was stopped in the water she could not put her engines in reverse or use any engine or other mechanical power in checking her speed or bringing her to a stop.

(7) She did not stop, slacken speed, or use her helm to avoid collision until such maneuvers were too late to avoid collision.

(8) She was negligent in other respects, as to which the libelants are not at present informed, and as to which they beg leave of court to amend the libel and specify when such other acts of negligence are known.

## XI.

That as a result of said collision damages were suffered as follows:

(1) The Cruiser "CHICAGO" was struck by the bow of the "SILVERPALM" with such violence that a hole was cut in her port side approximately 40 feet in width and 20 feet in depth from her upper deck line to the water's edge. Stores and supplies on board belonging to said libellant were completely destroyed. [12]

The libellant, the UNITED STATES OF AMERICA, is at present unable to state with accuracy the cost of labor and materials for effecting the necessary repairs to the Cruiser "CHICAGO", but on information and belief libellant avers that the cost of labor and materials will amount to \$364,000.00. Said libellant avers that the reasonable market value of said supplies and stores destroyed in said collision was not less than \$10,000.00. Libellant is unable to state at the present time the exact amount of said damage, and begs leave to amend and show the exact amount when it is known.

(2) The libellant, the UNITED STATES OF AMERICA, is unable to state with accuracy, but on information and belief libellant avers that a period of not less than forty days will be required in order to effect said repairs. During said period of repair, said libellant will be obliged to retain the officers and crew of the "CHICAGO" during the period that the Cruiser "CHICAGO" is under repairs, and will be obliged to pay to them wages

and subsistence during such period of repairs not less than the sum of \$15,000.00, and will lose the use and benefit of their services during said period of repairs on account of said collision. Said libelant is now unable to state with accuracy the exact amount of said damage which will accrue, and begs leave to amend and show the exact amount when it is known.

(3) Libelant, MARIAN B. CHAPPELLE, is the administratrix of the Estate of FREDERICK S. CHAPPELLE, and sues for the benefit of herself as his widow. He left no children. He was injured in said collision and died a few hours after the collision on the 24th day of October, 1933, as the result of it. Said libelant alleges that FREDERICK S. CHAPPELLE was born on [13] June 26, 1897, was in good health at the time of the collision and was earning \$338.60 per month at the time of his death. Clothing and personal belongings on board the Cruiser "CHICAGO" owned by Frederick S. CHAPPELLE, of the reasonable value of \$332.70, were completely destroyed by the collision.

Libelant alleges that she was damaged as a result of said collision and prays the court to ascertain the amount of her damage and give judgment therefor.

(4) Libelant, ETHEL G. MacFARLANE, is the administratrix of the Estate of HAROLD A. MacFARLANE, and sues for the benefit of herself as his mother and sole heir-at-law. He left neither wife, children nor father. Said libelant alleges that HAROLD A. MacFARLANE was born September

26, 1907, was in good health at the time of said collision, and was earning \$190.00 per month. Libelant alleges that she was dependent on him at the time of his death, and was damaged by said collision. She prays the court to ascertain the amount of her damage and give judgment therefor.

(5) JOHN W. TROY, who was killed in said collision, was born June 14, 1894, was in good health at the time of the collision and was earning \$270.60 per month. He left as his sole heirs his widow, Mrs. John W. Troy, and five minor children as follows: Helen Elizabeth, aged 17 years; Hazel May, aged 14 years; John Walsh, aged 13 years; Constance Monica, aged 11 years, and Florence Etta, aged 11 years. In behalf of said widow and minor children, libelant, the UNITED STATES OF AMERICA, prays that the court ascertain the amount of damage suffered by each of them, and render judgment therefor.

(6) The libelant, JOSEPH A. OEHLERS, alleges that he sustained personal injuries as follows: a crushing of the right forearm, which required it to be amputated; a fracture of three ribs, and a fracture of the skull. Said libelant alleges that he suffered great pain as a result of said injuries [14] and that his earning power was and is seriously reduced by said injuries. The extent of said reduction of earning power is not known at present because the said libelant does not know the full extent of his permanent injuries. He begs leave to amend this libel hereafter when the full extent

of his damage is known. He prays the court to ascertain the amount of his damage and give judgment therefor.

(7) Libelant LOUIS GIARD was thrown off the Cruiser "CHICAGO" by the violence of the collision. His back was strained and the ligaments of the right leg were strained and injured. Said libelant alleges that not less than five weeks medical care in a hospital will be necessitated by the collision. Said libelant suffered and suffers great pain as the result of said injuries. The extent of his disabilities, whether permanent or not, is not known at present. Said libelant begs leave to amend this libel when the extent of his injuries is known and for the court to give judgment for his damages.

(8) The libelant, the UNITED STATES OF AMERICA, in behalf of officers and members of the crew of the "CHICAGO", alleges that as a result of said collision damages were sustained on account of loss of clothing, stores and personal belongings which were the property of officers and members of the crew of the "CHICAGO." On information and belief, the libelant, the UNITED STATES OF AMERICA, alleges that these damages aggregate \$13,500.00. Libelant begs leave to amend and show the exact amount of said losses when they are fully ascertained.

## XII.

The premises all and singular are true and within the admiralty and maritime jurisdiction of this Honorable Court. [15]

WHEREFORE libelants pray that process in due form of law, according to the rules and practice of this Honorable Court in causes of admiralty and maritime jurisdiction, may issue against the said Motorship "SILVERPALM", her engines, tackle, etc. and against all persons having or claiming any interest therein; that they may be cited to appear and answer all and singular the matters aforesaid; that a decree may be entered herein in favor of libelants against the said Motorship "SILVERPALM", her engines, etc. for the amount of damages set forth herein and as may hereinafter be alleged, with interest and costs; that said Motorship "SILVERPALM" be condemned and sold to pay the same, and for such other relief as may be just.

H. H. McPIKE,

United States Attorney.

ROBT. L. McWILLIAMS,

Asst. United States Attorney.

ESTHER B. PHILLIPS,

Asst. United States Attorney.

Attorneys for Libelant.

[Verified.]

[Admission of Service.]

[Endorsed]: Filed November 23, 1933. [16]

[Title of Court and Cause—No. 21666-S.]

CLAIM.

To the Honorable Judges of the District Court of the United States for the Northern District of California:

The claim of Silver Line, Limited, a corporation to the British Motorship "Silverpalm" her tackle, apparel and furniture, now in the custody of the Marshal of the United States for the said Northern District of California, at the suit of United States of America, Ethel G. MacFarlane, as Administratrix, Marian B. Chappelle, as Administratrix, Joseph A. Oehlers and Louis Giard alleges—

That it is the true and bona-fide owner of the said British Motorship "Silverpalm" her tackle, apparel and furniture, and that no other person is owner thereof. [17]

Wherefore, the claimant pray that this Honorable Court will be pleased to decree a restitution of the same to Silver Line, Limited and otherwise right and justice to administer in the premises.

LILLICK, OLSON & GRAHAM  
Proctor for Claimant

B. T. Cox deposes and says that he was and is the master of said vessel, and that at the time of the said arrest thereof, he was in possession of the same as the lawful bailee thereof for the said owner, and that said owner reside out of the said Northern District of California, and more than one hundred miles from the City of San Francisco, in said District.

Northern District of California—ss.

Subscribed and sworn to before me this 16th day of December A. D. 1933.

CHARLES E. POLK

Notary Public, in and for the City and County of San Francisco, State of California. My Commission expires May 9 1935

[Endorsed]: Filed December 16, 1933.

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[Title of Court and Cause—No. 21666-S.]

**STIPULATION FOR RELEASE OF VESSEL.**

IT IS HEREBY STIPULATED that the motorship "SILVERPALM", now under attachment, and in the custody of the United States Marshal for this district, under process issued in the above entitled cause, may be released from such custody by the filing of an admiralty stipulation with an accredited surety thereon in the amount of Three Hundred and Fifty-two Thousand Dollars (\$352,000), which sum has been agreed upon between counsel for the respective parties from an estimate made by competent appraisers who have estimated her value in her damaged condition, with an allowance in addition thereto for interest and for her pending freight and consumable stores.

IT IS FURTHER STIPULATED that the said bond may be used as an interim bond (provided that

it in terms sufficiently so provides) in any proceedings hereafter commenced by the owner of the "SILVERPALM" for the purpose of limiting their liability for damage caused in the collision referred to in the libel filed in the above entitled cause and if such limitation proceedings [18] be commenced, that when an appraisal is made, and the value of the interests of the petitioner are determined, that the said bond may be modified in an amount to conform to the value as fixed by such appraisement therein which shall equal the interests of the petitioner in the said vessel, her freight pending, and her consumable stores.

Dated: San Francisco, California, November 30, 1933.

LILLICK, OLSON & GRAHAM

Proctors for Motor Boat

"Silverpalm" and her Owners

H. H. McPIKE

United States Attorney,

Proctor for United States of  
America

ROBERT L. McWILLIAMS,

Asst. U. S. Atty.

E. B. PHILLIPS

Assistant United States  
Attorney

Attorneys for Libelant

[Endorsed]: Filed December 16, 1933. [19]

(Page) 296 (RELEASE BOND)

No. 21666-S

In the Southern Division of the United States District Court for the Northern District of California in Admiralty Stipulation

Entered Into In Pursuant To The Rules of Practice of This Court.

WHEREAS, a libel was filed on the 1st day of November in the year of our Lord one thousand nine hundred and thirty-three by the United States of America, et al. against British M/S "Silverpalm", etc., for the reasons and causes in said libel mentioned: And, whereas, the said M/S "Silverpalm" in the custody of the United States Marshal, under the process issued in pursuance of the prayer of said libel, and whereas the said M/S "Silverpalm" has been claimed by Silver Line, Limited, a corp.; And, whereas, it has been stipulated that said M/S "Silverpalm" may be released from arrest upon the giving and filing of an Admiralty Stipulation in the sum of Three Hundred Fifty Two Thousand (352,000) dollars, (C.M.T) as appears from said stipulation now on file in said Court; And the parties hereto hereby consenting and agreeing that, in case of default or contumacy on the part of the claimant or their sureties, execution for the above amount may issue against their goods, chattels and lands.

NOW, THEREFORE, the condition of this Stipulation is such, that if the Stipulators undersigned,

shall at any time, upon the Interlocutory or final Order or Decree of the said District Court, or of any Appellate Court to which the above named suit may proceed, and upon notice of such Order or Decree, to Lillick, Olson & Graham, Esquires Proctors for the Claimant of said M/S "Silverpalm" abide by and pay the money awarded by the final Decree rendered by the Court or the Appellate Court if any appeal intervene, then this Stipulation to be void, otherwise to remain in full force and virtue. [20]

This recognizance shall be deemed and construed to contain the "express agreement" for summary judgment, and execution thereon, mentioned in Rule 34 of the District Court.

**SILVER LINE LTD.**

By **T. A. ENSOR**

**INDEMNITY INSURANCE**

**COMPANY OF NORTH**

**AMERICA**

By **HARRY C. MILLER,**

Atty in fact.

Taken and acknowledged this 16th day of December, 1933, before me.

[Seal]

**C. M. TAYLOR,**

Deputy Clerk, U. S. District Court, Northern  
District of California.

[Endorsed]: Filed December 16, 1933. [21]

In the Southern Division of the United States District Court, for the Northern District of California in Admiralty

No. 21665-K

SILVER LINE LIMITED,

Libelant,

vs.

UNITED STATES OF AMERICA,

Respondent.

No. 21666-S

UNITED STATES OF AMERICA,

Libelant,

vs.

Motor Boat "SILVERPALM", her engines, tackle, apparel and furniture,

Respondent.

No. 21697-L

In the Matter of the Petition of SILVER LINE, LIMITED, a corporation, owner and operator of the British Motorship "SILVERPALM", for exoneration from or limitation of liability.

#### STIPULATION AND ORDER FOR CONSOLIDATION

IT IS HEREBY STIPULATED and AGREED that all of the above entitled matters may be ordered consolidated for all purposes and that any proceedings taken, heretofore or hereafter, in any one of

the said causes may be deemed to be taken in the other two.

Dated: December 16, 1933.

LILLICK OLSON and GRAHAM  
Proctors for Libelant and Petitioner,  
Silver Line Limited.

H. H. McPIKE

United States Attorney

ROBERT L. McWILLIAMS

Assistant United States Attorney

ESTHER B. PHILLIPS

Asst. U. S. Attorney

It is so ordered:

HAROLD LOUDERBACK

United States District Judge

[Endorsed] Filed Dec. 16, 1933. [22]

In the Southern Division of the United States District Court for the Northern District of California

In Admiralty

No. 21666-S

Re-Assigned to No. 21665-K

UNITED STATES OF AMERICA, et al,  
Libelants,

vs.

British Motorship "SILVERPALM", her engines,  
tackle, apparel, furniture, etc.,  
Respondents.

SILVER LINE, LIMITED, owner and operator  
of the British Motorship "SILVERPALM",  
Cross-Libelant,

vs.

UNITED STATES OF AMERICA, owner and  
operator of the Cruiser "CHICAGO", et al.,  
Cross-Respondents.

ANSWER AND CROSS-LIBEL TO AMENDED  
LIBEL IN REM

To the Honorable, the Judges of the United States District Court, for the Northern District of California, Southern Division:

COMES NOW THE SILVER LINE, LIMITED, respondent and claimant herein, and for answer and cross-libel to the amended libel of libelants, the United States of America, Ethel G. MacFarlane,

Marian B. Chappelle, Joseph A. Oehlers and Louis Giard, admits, denies and alleges as follows:

I

Answering unto the allegations of Article I of the amended libel, admits the same. [23]

II

Alleges that it has no information or belief sufficient to enable it to answer the allegations of Articles II, III, IV and V of the said amended libel.

III

Answering unto the allegations of Article VI, admits the same, save and except that it denies that the said "SILVERPALM" is or was operated by the General Steamship Corporation, a California corporation.

IV

Answering unto the allegations of Article VII of the amended libel, admits that on the 24th day of October, 1933, the said Motorship "SILVERPALM" and the United States Cruiser "CHICAGO" were in collision; denies that the said collision was caused by the negligence or carelessness of the "SILVERPALM"; admits the remaining allegations of Article VII.

Answering unto the allegations of Article VIII, denies each and every, all and singular, the same.

VI

Answering unto the allegations of Article IX, denies upon information and belief that the "CHI-

"CHICAGO" was proceeding on a course of 350° true at 8:00 o'clock in the morning of October 24, 1933; admits the wind conditions alleged in said amended libel; admits the fog conditions alleged in said amended libel; denies that the "CHICAGO" was proceeding at a moderate speed and/or observing due and any caution under the circumstances and in this respect alleges that the "CHICAGO" was proceeding at a highly immoderate speed, not having any regard for the circumstances presented. Alleges that it has no information or belief sufficient to enable it [24] to answer the allegation that very shortly or at all after 8 o'clock the navigating officers of the "CHICAGO" heard a fog horn of a vessel on the "CHICAGO'S" starboard bow. Denies upon information and belief that when this fog horn was heard, if at all by those on the "CHICAGO" the vessel's engines were slowed and/or then or at all stopped. Alleges that it has no information or belief sufficient to enable it to answer the said allegations that a freighter was then or at all seen 2 points on the "CHICAGO'S" starboard bow on a course slightly converging and/or that the "CHICAGO'S" rudder was put left to bring her to a course of 330° true in order to parallel the course of the vessel seen on the "CHICAGO'S" starboard bow, and calls for strict proof thereof, if relevant. Alleges that it has no information or belief sufficient to enable it to answer the allegation that the "CHICAGO" had come and/or almost come to her new and/or any course of 330° true and/or that her engines had been put ahead and/or

that a vessel which later proved to be the respondent "SILVERPALM" was seen approximately 2 points on the "CHICAGO'S" port bow, and therefore calls for strict proof of all of said allegations, if relevant. Denies that at said time and/or at all the said cruiser "CHICAGO" was going at a moderate rate of speed and in this respect alleges that her speed was highly immoderate under the circumstances presented. Denies that the said Motorship "SILVERPALM" was seen coming out of a fog at full speed. Alleges that it has no information or belief sufficient to enable it to answer the allegations that no signals from the "SILVERPALM" had been heard by the "CHICAGO'S" officers prior to seeing her and therefore calls for strict proof thereof, if relevant. Denies upon information and belief that upon seeing the "SILVERPALM" the navigators of the "CHICAGO" immediately put her engines full speed astern and denies, upon information and belief, that the said [25] cruiser "CHICAGO" was given a full right rudder at said time. Denies that the "SILVERPALM" proceeded on without substantially reducing her speed. Admits that the said vessel proceeded until shortly before the collision without changing her course. Admits the angle of the collision. Alleges that it has no information or belief sufficient to enable it to answer the allegation that the moment of the impact was 7 minutes, 10 seconds after 8 o'clock A. M. according to the "CHICAGO'S" time and therefore calls for strict proof thereof, if relevant. Denies that at

the moment of impact and/or at any other time prior to the collision the "CHICAGO" was slowly moving ahead in the water and/or under 5 knots per hour and denies that at said time the "SILVER-PALM" was moving at approximately 12 knots per hour. Alleges that it has no information or belief sufficient to enable it to answer the allegation that the "CHICAGO'S" maneuver of reversing her engines and turning to starboard was designed to minimize the damage caused by the collision. Alleges upon information and belief that the said turning to starboard did not minimize but in fact caused a collision. Admits the remaining allegation of the said Article.

#### VII

Answering unto the allegations of Article X, upon information and belief denies each and every, all and singular, the same.

#### VIII

Answering unto the allegations of Article XI alleges that it has no information or belief sufficient to enable it to answer any or all of said allegations and therefore calls for strict proof thereof, if relevant, save and except that it admits that the cruiser "CHICAGO" was struck by the bow of the "SILVERPALM". [26]

#### IX

Denies that the premises all and/or singular are true, but admits that if proper they are within the admiralty and maritime jurisdiction of this Honorable Court.

COMES NOW the cross-libelant and respondent, SILVER LINE, LIMITED, and by way of further and separate defense to the amended libel herein and as a cross-libel against the cross-respondents, UNITED STATES OF AMERICA, alleges as follows:

I

That cross-libelant, SILVER LINE, LIMITED, is and was at all the times hereinafter mentioned, a corporation duly organized and existing under and by virtue of the laws of the Kingdom of Great Britain, and is and was at all of said times the sole owner of the motorship "SILVERPALM", her boilers, engines, tackle, apparel, furniture and appurtenances.

II

That the cross-respondent, United States of America, is now and at all times hereinafter mentioned has been a sovereign state and at all the times herein mentioned was and now is the owner of the American cruiser "CHICAGO", which said vessel is now and/or was in the harbor of San Francisco and/or its tributaries, and within the jurisdiction of this Honorable Court.

III

That heretofore, to wit, at about the hour of 8:13 a. m. on the 24th day of October, 1933, the said motorship "SILVERPALM" and the American cruiser "CHICAGO" were in collision. That the said collision occurred on the Pacific Ocean off the coast of the State of California in the vicinity of Point Sur, said State. [27] That at and prior

to the time of said collision, the motorship "SILVERPALM" was southbound on a voyage from the port of San Francisco, California, to the port of New Orleans, Louisiana, and thereafter to ports in South Africa, and, on information and belief, the cruiser "CHICAGO" was bound on a voyage from the port of San Pedro, California, to the port of San Francisco, California. That at about the hour of 8:11 a. m. on the said 24th day of October, 1933, while so proceeding, and without any previous warning, those on board the motorship "SILVERPALM" saw the cruiser "CHICAGO" loom up in the haze some distance ahead off the starboard bow. That almost immediately those on the "SILVERPALM" ascertained that althouh the cruiser "CHICAGO" was on the starboard bow of the "SILVERPALM", the former's course was being directed to starboard and directly across the bows of the "SILVERPALM" in such a manner as to expose the port bow and side of the "CHICAGO" to the "SILVERPALM". That immediately the course of the "SILVERPALM" was directed to starboard in an attempt to permit the "CHICAGO" to pass the "SILVERPALM" port to port, althouh when first seen the "CHICAGO" was in a position where, had she directed her course to port, the vessels would have safely passed starboard to starboard. The cruiser "CHICAGO" was proceeding at an improper rate of speed under the circumstances presented, and, having changed her course, her bow crossed directly in front of the "SILVERPALM" in such a manner as to cause a collision between

the two vessels, the bow of the "SILVERPALM" striking the port side of the "CHICAGO" at a place adjacent to No. turret and approximately 75 feet aft of the bow of the said cruiser "CHICAGO". That at the time of the collision, the "SILVERPALM" was on a port helm in a manner intended to direct her course to starboard in compliance with the maneuver of the "CHICAGO", which was directing its course to starboard. In spite of the effort of [28] those on the "SILVERPALM" to avoid a collision by ordering their engines full speed astern as soon as the presence of the "CHICAGO" was known and directing the course of the vessel to starboard as soon as course of the "CHICAGO" across the bows of the "SILVERPALM" was ascertained, and by reason of the change of course of the "CHICAGO" and her improper speed towards the "SILVERPALM", a collision occurred between the two vessels at 8:13 a. m., deck time.

#### IV

That at and prior to the commencement of the said voyage of said motorship "SILVERPALM", due diligence was exercised by cross-libelant to make said vessel in all respects seaworthy and properly and efficiently officered, manned, equipped and supplied, and well and sufficiently fitted and supplied for the voyage aforesaid, and said vessel was at all of the times herein mentioned in all respects seaworth and properly and efficiently officered, manned, equipped and supplied, and well and sufficiently fitted and supplied for the said voyage.

## V

That the said motorship "SILVERPALM" committed no fault nor negligence in the premises, and that the collision and damage received by said motorship "SILVERPALM" was due solely to the carelessness and negligence of the said American cruiser "CHICAGO", owned and/or operated by the cross-respondent, United States of America, and that of her officers and crew, in the following respects, as cross-libelant is informed and believes:

(a) That at and prior to the time of said collision, the said cruiser "CHICAGO" was not proceeding or maneuvering at a moderate rate of speed under the circumstances existing at that time; that the said cruiser "CHICAGO", having the said motorship "SILVERPALM" on her starboard bow, and plainly seeing the said [29] motorship "SILVERPALM", although the circumstances required it to do so, failed to keep out of the way of the said motorship "SILVERPALM" by directing her course to port permitting a starboard to starboard passage and away from the course of the motorship "SILVERPALM"; but in direct violation of the obligations of those in command of the said cruiser "CHICAGO", altered her course to starboard and directly across the course of the motorship "SILVERPALM" in such a manner that the port bow in the way of No. turret on the cruiser "CHICAGO" came in violent contact with the bow of the motorship "SILVERPALM" causing serious damage to both vessels, and further, that the said cruiser

“CHICAGO” in crossing the bow of the said motorship “SILVERPALM”, wholly failed and neglected to stop her engines, but on the contrary went full speed ahead in such a manner as to collide with the said vessel while so endeavoring to cross in front of it.

(b) That the said cruiser “CHICAGO” did not have on watch proper and competent lookouts.

(c) That the said cruiser “CHICAGO” did not have on watch proper and competent officers attentive to their duties.

(d) That the said cruiser “CHICAGO” was negligently and carelessly navigated and maneuvered by those operating the vessel in that she collided with the said motorship “SILVERPALM” without any fault on the part of said latter vessel, striking the said vessel on the stem and damaging the stem and adjacent plates, necessitating repairs in connection therewith.

(e) That the said cruiser “CHICAGO” was negligent and careless in other and further particulars of which the cross-libelant is not now informed, but when so informed begs leave to amend its cross-libel accordingly. [30]

## VI

That as the result of said collision, and due to the carelessness and negligence of the said American cruiser “CHICAGO”, the said motorship “SILVERPALM” has suffered damages in the amount of approximately \$150,000.00, including general average expenses of ship and cargo, towage, dockage,

damage to cargo, demurrage and other items of which cross-libelant is not now advised, but when so advised will ask leave of Court to amend its cross-libel accordingly.

## VII

That the cross-libel herein is maintained against the libelant and cross-respondent herein as a counterclaim to the claim set forth in the libel of libelant and in addition thereto is maintained under and by virtue of the terms of that certain act of Congress of the United States of March 3, 1925, entitled:

“Suits in Admiralty against the United States for Damages Caused by or for Towage or Salvage Services Rendered to Public Vessels.”

the terms of which said Act are herein incorporated and made a part hereof as though fully set forth herein.

## VIII

That the cross-libelant herein is a national of the Kingdom of Great Britain.

That under and by virtue of the laws of the Kingdom of Great Britain, nationals of the United States of America are allowed to sue in the courts of Great Britain under circumstances similar to those set forth herein.

## IX

That all and singular the premises are true and within the admiralty and maritime jurisdiction of this Honorable Court. [31]

WHEREFORE, respondent and cross-libelant prays that the amended libel of the United States of

America herein be dismissed and that this Honorable Court may be pleased to decree the damages as prayed for by cross-libelant with interest and costs of suit and that cross-libelant may have such other and further relief in the premises as in law and justice it may be entitled to receive.

SILVER LINE, LIMITED,

By KERR STEAMSHIP COMPANY, INC.,

Its General Agents,

By T. A. ENSOR

LILLICK, OLSON and GRAHAM

Proctors for Respondent and

Cross-Libelant.

(Verified)

(Admission of Service)

[Endorsed]: Filed Jan. 25, 1934. [32]

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[Title of Court and Cause.—No. 21666-S.]

ANSWER TO CROSS-LIBEL

Now comes the cross-respondent UNITED STATES OF AMERICA and alleges as follows:

I

Cross-respondent admits the allegations of paragraphs I and II of the cross-libel.

II

Answering the allegations of paragraph III of the cross-libel, cross-respondent admits that the Motorship "SILVERPALM" and the Cruiser "CHICAGO" were in a collision on the 24th day of October,

1933, shortly after 8 o'clock in the morning. Admits that said collision occurred on the Pacific ocean off the coast of California in the vicinity of Point Sur. Cross-respondent admits that at and prior to the time of [33] collision the "SILVERPALM" was southbound from San Francisco, California, to New Orleans, Louisiana, and thereafter to parts in South Africa, and that the "CHICAGO" was northbound from San Pedro, California, to San Francisco, California. Admits that in the collision between the two vessels the bow of the "SILVERPALM" struck the "CHICAGO'S" port side at a place adjacent to the "CHICAGO'S" No. 1 turret and approximately 75 feet aft of the "CHICAGO'S" bow. Alleges that the collision occurred at about seven minutes past 8 o'clock A. M. Saving for these admissions cross-respondent denies that the collision occurred in the manner described in paragraph III of the cross-libel. Cross-respondent alleges that the collision was caused by the negligence of the "SILVERPALM", her owners, officers and crew, in that: (1) The "SILVERPALM" did not maintain a proper lookout; (2) she did not have competent officers on watch attending to their duties; (3) prior to the collision she was not sounding proper signals; (4) she was proceeding in the fog at a speed which did not permit her to stop her maneuvering within the limits of visibility at that time and place; (5) the vessel was unseaworthy and improperly constructed with the privity and knowledge of her owners, particularly in that she is and at all times herein mentioned

was so constructed, that until her engines are stopped in the water she cannot put her engines in reverse or use any engine power in checking her speed or bringing her to a stop; (6) she was proceeding at an excessive rate of speed under the existing weather conditions in consideration of the fact that she was so constructed that until her engines were stopped in the water she could not put her engines in reverse or use any engine power to check her speed or bring her to a stop; (7) she did not stop, slacken her speed, or use her helm to avoid collision until such maneuvers were too late to [34] avoid collision; (8) her master, navigating officers and officers on watch were incompetent; (9) she was negligent in other respects as to which the cross-respondent is not at present informed, but as to which cross-respondent begs leave to amend this answer and to specify the same when such acts of negligence are known. Cross-respondent alleges that the "Chicago" was properly officered, manned, equipped and supplied and that she was at all times prior to the collision and at the time of the collision navigated in accordance with all the rules and regulations applicable to her under the existing conditions. The "Chicago" committed no fault or negligence and the collision was due solely to the carelessness and negligent navigation of the "Silverpalm" and that of her owners, officers and crew.

### III

Answering the allegations of paragraph IV of the cross-libel, cross-respondent denies that at and

prior to the commencement of said voyage of the Motorship "Silverpalm" due diligence was exercised by the cross-libellant to make said vessel in all respects seaworthy and properly and efficiently officered, manned, equipped and supplied and well and sufficiently fitted and supplied for said voyage. Cross-respondent denies that in fact said vessel was seaworthy in all respects and properly and efficiently officered, manned, equipped and supplied and sufficiently fitted and supplied for said voyage.

#### IV

Answering the allegations of paragraph V cross-respondent denies the allegation in said paragraph that the Motorship "Silverpalm" committed no fault or negligence in the premises. Denies that the collision and damage received by the "Silverpalm" was due solely or at all to the carelessness or negligence of the "Chicago", or that of her officers [35] and crew.

Further answering paragraph V, cross-respondent denies the allegations of negligence of paragraph V (a), namely, the allegation that the "Chicago" was not proceeding or maneuvering at a moderate rate of speed under the existing circumstances. Cross-respondent denies that the "Chicago" had the "Silverpalm" on her starboard bow. Denies that the circumstances required the "Chicago" to keep out of the way of the "Silverpalm". Denies that the "Chicago" plainly saw the "Silverpalm", excepting after the "Silverpalm's" emergence from a fog bank. Denies that those in com-

mand of the "Chicago" directly or indirectly violated their obligations. Denies that the circumstances required the "Chicago" to keep out of the way of the "Silverpalm" by directing the "Chicago's" course to port. Denies that the circumstances required the "Chicago" to permit a starboard to starboard passage away from the course of the "Silverpalm". Admits that the "Chicago" attempted to turn her course to starboard. Denies that said change of course was in direct violation or violation at all of the obligation of those in command of the "Chicago". Denies that said change of course to starboard was directly across the course of the "Silverpalm". Admits that the bow of the "Silverpalm" struck violently the port bow of the "Chicago" at or near the "Chicago's" No. 1 turret. Admits that the collision caused serious damage to both vessels. Denies that the Cruiser "Chicago" crossed the bow of the "Silverpalm". Denies that she wholly failed and neglected or failed or neglected at all to stop her engines. Denies that the "Chicago" went full speed ahead so as to collide with the "Silverpalm" while endeavoring to cross in front of her.

Answering the specification of negligence in paragraph V (b), cross-respondent denies that the Cruiser "Chicago" [36] did not have on watch proper and competent lookouts.

Answering the specifications of negligence in paragraph V (c), cross-respondent denies that the Cruiser "Chicago" did not have on watch proper and competent officers attentive to their duties.

Answering the specifications of negligence in paragraph V (d), cross-respondent denies that the Cruiser "Chicago" was negligently or carelessly navigated or maneuvered by those operating the Cruiser. Denies that she collided with the Motorship "Silverpalm" without fault on the part of the "Silverpalm". Admits that there was a collision and that the stem of the "Silverpalm" and the port side of the "Chicago" came together. Admits that the "Silverpalm's" stem and adjacent plates were damaged necessitating repairs. Alleges that the said collision was caused solely by the fault of the "Silverpalm".

Answering paragraph V (e) cross-respondent denies that the Cruiser "Chicago" was negligent or careless in other or further particulars.

Excepting as herein expressly admitted, cross-respondent denies the allegations of paragraph V.

## V.

Answering paragraph VI of the cross-libel, cross-respondent admits that the "Silverpalm" suffered damages as a result of the collision. Denies that said damages were due to the carelessness and/or negligence of the "Chicago". Cross-respondent is not informed and has no belief upon the amount of damages suffered by the "Silverpalm" as the result of this collision and calls for strict proof of her damages.

VI.

Answering paragraph VIII of the cross-libel, cross-respondent has no information or belief upon the allegation [37] that under the laws of the Kingdom of Great Britain nationals of the United States are allowed to sue the Kingdom of Great Britain in its courts on circumstances similar to those set forth in the cross-libel, and therefore cross-respondent denies the allegations in that behalf and calls for proof of them.

VII.

Cross-respondent in answer to paragraph IX of the cross-libel, denies that the premises are true, but admits that they are within the admiralty and maritime jurisdiction of this court.

And for a further defense, cross-respondent alleges that said collision took place under the circumstances heretofore set forth in respondent's amended libel herein, to which cross-libelant's cross-libel has been interposed as a counter claim.

WHEREFORE, cross-respondent prays that the cross-libel be dismissed, for its costs, and for such other relief as may be just.

H. H. McPIKE,

United States Attorney

ROBT. L. McWILLIAMS,

Asst. United States Attorney.

ESTHER B. PHILLIPS,

Asst. United States Attorney.

[Verified.]

[Admission of Service.]

[Endorsed]: Filed February 2, 1934. [38]

In the Southern Division of the United States District Court for the Northern District of California.

Nos. 21665-K, 21666-K, 21697-K, 21713-K.

SILVER LINE, LIMITED,

Libelant,

vs.

UNITED STATES OF AMERICA,

Respondent.

UNITED STATES OF AMERICA,

Libelant,

vs.

MOTORBOAT "SILVERPALM",

Respondent.

PETITION OF SILVER LINE, LIMITED  
(Petition for Limitation)

HAYWARD, YOUNG & CO., LTD., ET AL,

Libelants,

vs.

UNITED STATES OF AMERICA,

Respondent.

#### ORDER FOR REASSIGNMENT.

I consent to the above-entitled cases being reassigned to me for all further proceedings.

HAROLD LOUDERBACK

Judge

Dated; March 6 1934.

I consent to the above-entitled cases being so reas-  
signed and it is So Ordered

FRANK H. KERRIGAN

Judge

Dated; March 6 1934.

Transferred to expedite trial

[Endorsed]: Filed March 6, 1934. [39]

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[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Tuesday, the 13th day of March, in the year of our Lord one thousand nine hundred and thirty-four.

P R E S E N T : The Honorable HAROLD LOUDERBACK, District Judge.

[Title of Causes—Nos. 21666-L, 21665-L, 21697-L, 21713-L.]

(MINUTES OF TRIAL.)

These four cases came on regularly for trial, having been heretofore consolidated for the purpose of trial. Miss Esther B. Phillips, Asst. U. S. Atty., and Robert L. McWilliams, Esq., Asst. U. S. Atty., Ira S. Lillick, Esq., and Jos. L. Geary, Esq., Attorneys for the M. S. "Silverpalm" and Silver Lines,

Ltd., hereafter referred to as the Respondents; and Harold M. Sawyer, Esq., Attorney for Libelants in case No. 21713 and hereafter included in the reference to Respondents, were present.

Miss Phillips made an opening statement to the Court. On motion of Mr. Lilliek and with consent of Miss Phillips, it was ordered that all witnesses be excluded from the Court Room except when on the witness stand.

Robert R. McDonnell, James Wm. Emmerson, Raymond D. Strohmeier, Harris Laning and Herbert E. Kays were each sworn and examined on behalf of the United States, and the Government introduced into evidence its exhibits marked 1; 2a; 2b; 2c; 2d; 2e; 2f; 2g; 2h; 2i; 2j; 2k; 2l; 2m; 2n; 3a; 3b; 3c; 3d; 3e; 3f. The Respondent introduced into evidence its exhibits marked Nos. 1 and 2. Ordered that the further trial of this case be continued to March 14, 1934. [40]

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[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Wednesday, the 14th day of March, in the year of our Lord one thousand nine hundred and thirty-four.

PRESENT: The Honorable HAROLD LOUDERBACK, District Judge.

[Title of Causes—Nos. 21666-L, 21665-L, 21697-L,  
21713-L.]

(MINUTES OF TRIAL.)

The Attorneys herein being present, the trial of this case was resumed. Herbert E. Kays was recalled and further examined on behalf of the Libelant. Julius C. Deming and Robert O. Minter were each sworn and examined on behalf of the United States.

The Respondent, Silver Lines, Ltd., introduced into evidence its exhibits marked Nos. 1 and 2.

Ordered that the further trial of this case be continued to 10 a.m., March 15, 1934. [41]

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[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Friday, the 16th day of March, in the year of our Lord one thousand nine hundred and thirtyfour.

P R E S E N T : the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Cause—No. 21666-L.]

(MINUTES OF TRIAL.)

The Attorneys herein being present, the trial of this case was resumed. Robert O. Minter was recalled and examined. Manly H. Simons and Robert C. Starkey were each sworn and examined on behalf

of the United States, who introduced into evidence its exhibits marked Nos. 4 and 5. The Respondent introduced into evidence its exhibits marked Nos. 3 and 4. Ordered that the further trial of this case be and the same is hereby continued to March 19, 1934 at 9:30 a.m. [42]

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[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Monday, the 19th day of March, in the year of our Lord one thousand nine hundred and thirty-four.

PRESENT: the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Cause—No. 21666-L. et al.]

(MINUTES OF TRIAL.)

The Attorneys herein being present, the trial of this case was resumed. John R. Leeds, Fred Connarn, Wilfred L. Lemier and John Kershaw were each sworn and examined on behalf of the United States, and the Government introduced in evidence its exhibits marked No. 6. The Respondent introduced in evidence its exhibits marked No. 5. Order that the further trial of this case be continued to 10 a.m., March 20, 1934. [43]

[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Tuesday, the 20th day of March, in the year of our Lord one thousand nine hundred and thirty-four.

P R E S E N T : the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Causes—Nos. 21666-L, 21665-L, 21697-L, 21713-L.]

(MINUTES OF TRIAL.)

The Attorneys herein being present, the trial of this case was resumed. John Kershaw was recalled and further examined on behalf of the United States. Warren C. McKay, Frank T. Davenport and Wm. P. Birchmire were each sworn and examined on behalf of the United States. The Respondents introduced into evidence their exhibits marked Nos. 6 and 7. Ordered that the further trial of the case be continued to March 21, 1934 at 10 a.m. [44]

[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Wednesday, the 21st day of March, in the year of our Lord one thousand nine hundred and thirty-four.

P R E S E N T : the Honorable HAROLD LOUDERBACK, United States District Judge.

[Title of Causes—Nos. 21666-L, 21665-L, 21697-L, 21713-L.]

(MINUTES OF TRIAL.)

The Attorneys herein being present, the trial of this case was resumed. Carl W. Brewington, Ernest B. Colton and Baldwin M. Woods were each sworn and examined on behalf of the United States, and the Government introduced in evidence its exhibits marked Nos. 7, 8, 9-A, 9-B, and 10. A portion of the deposition of Bernard T. Cox was read in evidence by the United States. The Respondent introduced in evidence its exhibit marked No. 8. Ordered that the further trial of this case continue to 10 a.m., March 22, 1934. [45]

[Title of Court and Cause—No. 21666-L.]

ORDER JOINING  
BANK OF AMERICA NATIONAL TRUST &  
SAVINGS ASSN. AS CO-LIBELANT.

The motion of H. H. McPIKE, United States Attorney for the Northern District of California, appearing by ESTHER B. PHILLIPS, Assistant United States Attorney, that the BANK OF AMERICA NATIONAL TRUST & SAVINGS ASSOCIATION, special administrator in the State of California of the Estate of JOHN W. TROY, deceased, be joined as co-libelant in the above-entitled cause, coming regularly on for hearing, and representations having been made, and it appearing in the amended libel heretofore made, that claims in behalf of the surviving widow and surviving children of said JOHN W. TROY were made by the UNITED STATES OF AMERICA for damages arising out of the death of said JOHN W. TROY in said collision, and IT NOW APPEARING that said special administrator, the BANK OF AMERICA NATIONAL TRUST & SAVINGS ASSOCIATION, is the proper party for representing said widow and children in place of the UNITED STATES OF AMERICA,

NOW THEREFORE, it is hereby ORDERED, ADJUDGED and DECREED that the BANK OF AMERICA NATIONAL TRUST & SAVINGS

[46] ASSOCIATION be and the same is hereby made a co-libelant in the above-entitled cause.

HAROLD LOUDERBACK

United States District Judge.

Dated: March 23, 1934.

[Endorsed]: Filed Mar. 23, 1934. [47]

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[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Friday, the 23rd day of March, in the year of our Lord one thousand nine hundred and thirty-four.

P R E S E N T : the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Cause—No. 21666-L.]

(MINUTES OF TRIAL.)

The Attorneys herein being present, the trial of this case was resumed. Carl J. Vogt and Robert R. McDonell were recalled, Randall E. Dees was sworn and each was examined on behalf of the United States. The Government introduced in evidence its exhibits marked Nos. 11, 12, 13, 14, 15, 16 and 17. The Government introduced in evidence the depositions of Wm. P. Ladd, M. J. Varick, G. F. Farrell, W. T. Womack, C. A. Smith, B. Cimbie, W. P. Burchmeyer, Chas. R. Deemer, L. R. Gray. Thereupon the United States rested.

Thos. W. Esor, James Barclay, David W. Dickey and Arthur Forster were each sworn and examined on behalf of the Respondent, who introduced in evidence its exhibits marked Nos. 11, 12, 13, 14, 15, 16, 17, 18, 19. The depositions of Donovan M. Pitt, Jefferey Newhouse, John Tough, Osman B. Puteh, Maharick B. Latip, George E. Stanley, Bernard T. Cox, Selwyn N. Copon, James R. Harding and Erick Irving were introduced in evidence on behalf of the Respondent. By stipulation between the parties, the testimony of James Barclay, pages 149 to 155, inclusive, taken at the Naval Board of Inquiry, was introduced in evidence on behalf of the Respondent.

Ordered that the further trial of this case be continued to March 27, 1934. [48]

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[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Tuesday, the 27th day of March, in the year of our Lord one thousand nine hundred and thirty-four.

P R E S E N T : the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Causes—Nos. 21666-L, 21665-L, 21697-L, 21713-L.]

(MINUTES OF TRIAL.)

The Attorneys herein being present, the trial of this case was resumed. David W. Dickey was re-

called and further examined on behalf of the Respondents, and the Respondents rested. Robert B. Freyer was sworn and examined in rebuttal on behalf of the United States, and the Government introduced in evidence its exhibit marked No. 18. Ordered that the further trial of this case be and the same is hereby continued to 10 a.m., March 28, 1934. [49]

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[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Wednesday, the 28th day of March, in the year of our Lord one thousand nine hundred and thirty-four.

PRESENT: the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Causes—Nos. 21666-L, 21665-L, 21697-L, 21713-L.]

(MINUTES OF TRIAL.)

The Attorneys herein being present, the trial of this case was resumed. The deposition of Harris Ben Latip was introduced in evidence by the United States; Wesley Hague was sworn and examined on behalf of the United States, and the Government introduced in evidence its exhibits marked No. 20 and 21. The Respondents introduced in evidence its exhibits marked Nos. 20, 21, 22, 23 and 24. Ordered that the further trial of this case be continued to March 29, 1934. [50]

[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Thursday, the 29th day of March, in the year of our Lord one thousand nine hundred and thirty-four.

PRESENT: the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Cause—No. 21666-L.]

(MINUTES OF TRIAL.)

The Attorneys herein being present, the trial of this case was resumed. Baldwin M. Woods and Frank B. Freyer were called and examined on behalf of United States. The Government introduced in evidence its exhibits marked Nos. 22, 23, 24, 25, 26. Ordered further trial continued to 10 a.m., March 30, 1934. [51]

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[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Friday, the 30th day of March, in the year of our Lord one thousand nine hundred and thirty-four.

PRESENT: the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Causes—Nos. 21666-L, 21665-L, 21697-L,  
21713-L.]

(MINUTES OF TRIAL.)

The Attorneys herein being present, the trial of this case was resumed. Frank B. Freyer was recalled and further examined on behalf of the United States. The Government introduced in evidence its exhibits marked Nos. 27, 28, 29. The case was then rested on behalf of United States. In sur-rebuttal, David W. Dickey was recalled and further examined on behalf of Respondents, who introduced in evidence their exhibits marked Nos. 25, 26, 27, 28, 29. Both parties rested. Ordered that this case be and the same is hereby continued to 10 a.m., April 20, 1934, for argument. [52]

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[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Monday, the 23rd day of April, in the year of our Lord one thousand nine hundred and thirty-four.

P R E S E N T : the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Causes—Nos. 21666, 21665, 21697, 21713.]

(MINUTES OF TRIAL.)

These cases came on regularly for argument, Miss Esther B. Phillips, Asst. U. S. Atty., Ira S. Lilliek,

Esq., Attorney for Silver Lines, Ltd., and Harold M. Sawyer, Esq., Attorney for the cargo owners, being present. By stipulation, the Respondent Silver Lines, Ltd., introduced in evidence its exhibit marked No. 30. The issues were thereupon argued by the said Attorneys, and it is ordered that the parties have five and five days within which to file Briefs. [53]

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[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Tuesday, the 19th day of June, in the year of our Lord one thousand nine hundred and thirty-four.

P R E S E N T : the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Cause—No. 21666-L.]

(ORDER FOR DECREE IN FAVOR OF  
LIBELANT AND CROSS-RESPONDENT.)

This case having been tried and submitted, being now fully considered, it is ordered that a Decree enter for the Libelant, upon the Libel, and for the Cross-Respondents, upon the Cross-Libel, upon findings of fact and conclusions of law to be filed. [54]

[Title of Court and Cause—No. 21666-L.]

PETITION FOR REHEARING AND/OR  
REARGUMENT, AND MEMORANDUM OF  
AUTHORITIES IN SUPPORT THEREOF.

To the Honorable Judge Harold Louderback, Judge  
of the United States District Court, Southern  
Division, for the Northern District of Cali-  
fornia:

SILVER LINE LIMITED, as owner of the  
British Motorship "SILVERPALM," respondent  
and cross-libelant in the above-captioned proceed-  
ing, now respectfully moves for a rehearing and re-  
[55] argument in the above entitled cause for  
the reasons:

I.

Because the Court erred in holding that the  
British Motorship "SILVERPALM" was solely  
at fault.

II.

Because the Court erred in holding that the  
United States Cruiser "CHICAGO" was not at  
fault or did not in anywise contribute to the collision  
with the "SILVERPALM."

III.

Because the Court erred in failing to hold that  
the Cruiser "CHICAGO" was partially responsible  
for the collision and that consequently a decree of  
divided liability should have been entered.

## IV.

Because the Court erred in failing to hold that the Cruiser "CHICAGO" was partially responsible for the collision pursuant to the faults which were definitely admitted to have occurred on the part of that vessel and her navigating and engine-room officers.

We respectfully submit that this Court has the inherent right to rehear and/or permit the re-argument of the issues involved in the present proceeding to prevent a miscarriage of justice. We respectfully submit that a proper decree in this proceeding should be one wherein the faults of the "CHICAGO" are recognized, and that vessel is held responsible for the faults and errors committed by her officers and crew. If the "SILVER-PALM" and the "CHICAGO" committed faults resulting in a collision, [56] then the damages should be divided in accordance with the authorities cited in the memorandum attached hereto.

WHEREFORE, SILVER LINE LIMITED, on behalf of itself and as the owner of the British Steamer "SILVERPALM" respectfully prays that this Honorable Court set a date for the hearing of the re-argument on the issues presented by the record in this case so that a miscarriage of justice may be prevented, and the facts justifying a decree of divided damages may be thoroughly reconsidered

by this Court before any interlocutory decree is filed herein.

Respectfully submitted,

LILLICK, OLSON & GRAHAM  
IRA S. LILLICK  
JOSEPH J. GEARY

Proctors for Silver Line  
Limited and the British  
Motorship "Silverpalm." [57]

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[Title of Court and Cause—No. 21666-L.]

#### MEMORANDUM OF AUTHORITIES.

We respectfully submit that an analysis of the record in this case definitely discloses errors and faults on the part of the "CHICAGO" which require that vessel to be held mutually at fault for the collision with the "SILVERPALM." In fact, the errors are not only capable of being deduced from the testimony; they are definitely admitted by the "CHICAGO'S" witnesses and by the exhibits introduced on behalf of that vessel. [58]

This Court possesses the power in such a case to grant a rehearing so that these factors can be definitely submitted to the Court for consideration (*The Princess Sophia*, 278 Fed. 180).

It is a well-recognized principle of the law of admiralty that where both vessels involved in a collision are jointly responsible for such collision, either through negligence or improper navigation,

or otherwise, a decree of divided liability should be entered (*The North Star*, 106 U. S. p. 17).

It is unnecessary to follow this citation with a long list of cases because the Federal Reports are replete with similar illustrations. See: *Rose's Notes*.

The record in this case discloses a definite, positive, clear admission that the "CHICAGO," on the morning in question, navigated in violation of the rule laid down by the Supreme Court of the United States in such cases as:

*The Colorado*, 91 U. S. 692; and

*The Nacoochee*, 137 U. S. 330.

See, also: *The Pennsylvania*, 19 Wall. 125.

The "CHICAGO," having by the admissions of her own officers and crew committed faults which were responsible, in part for the collision with the "SILVERPALM," it follows that the "CHICAGO" should bear liability for that collision equally with the "SILVERPALM" and should not be exonerated (*The Manitoba*, 122 U. S. 97).

It is respectfully submitted that a reconsideration of the facts of this case should be afforded to the "SILVERPALM" so that this Court may have presented to it the clear violations of the "Rules of the Road" by the "CHICAGO"; the improper [59] navigation of this vessel, to the end that there may be presented to the Court the effect of such faults when compared with the rules announced by the Supreme Court of the United States, cited in the above cases, and thus prevent an inequitable

burden of liability on the "SILVERPALM." We sincerely submit that the facts disclosed in this record fully justify a division of liability and that such should be the interlocutory decree of this Court.

Dated: June 21st, 1934.

LILLICK, OLSON & GRAHAM  
 IRA S. LILLICK  
 JOSEPH J. GEARY  
 Proctors for British  
 Motorship "Silverpalm."

(Admission of Service.)

[Endorsed]: Filed June 21, 1934. [60]

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[Title of Court and Cause—No. 21666-L.]

FINDINGS OF FACT AND CONCLUSIONS  
 OF LAW.

The above-entitled cause came on for trial on the 13th day of March, 1934, H. H. McPIKE, United States Attorney, ROBERT L. McWILLIAMS, Assistant United States Attorney, and ESTHER B. PHILLIPS, Assistant United States Attorney, appearing as proctors for Libelant and Cross-Respondent, UNITED STATES OF AMERICA, and for co-libelants, ETHEL G. MacFARLANE, as Administratrix, MARIAN B. CHAPPELLE, as Administratrix, JOSEPH A. OEHLERS, LOUIS GIARD and BANK OF AMERICA NATIONAL TRUST & SAVINGS ASSOCIATION, as Special

Administrator, and IRA S. LILLICK and JOSEPH J. GEARY appearing as counsel for Respondent and Cross-Libelant, the SILVER LINE, LIMITED. Witnesses in behalf of libelants and cross-libelants having been sworn and examined, and documentary evidence having been introduced, and the cause [61] thereafter having been argued and submitted to the Court for consideration and decision, and, after due deliberation, the Court now makes the following

### FINDINGS OF FACT:

#### I.

The Cruiser "CHICAGO", owned and operated by the UNITED STATES OF AMERICA, through its Department of the Navy, and the Motorship "SILVERPALM", owned and operated by the SILVER LINE, LIMITED, a corporation of the Kingdom of Great Britain, were in collision on the morning of the 24th day of October, 1933, at 7 minutes and 10 seconds past 8:00 o'clock in latitude 36°, 07' North, and longitude 122° and 17' West.

Both vessels were seriously damaged. No personal injuries or deaths were suffered on the "Silverpalm". On the "Chicago", the following were killed:

Lieutenant Harold MacFarlane,  
Lieutenant Frederick Chappelle,  
Pay Clerk John W. Troy.

Personal injuries were sustained by:  
Joseph A. Oehlers, and  
Louis Giard.

## II.

Prior to the collision both vessels were sounding fog signals as prescribed by law. The fog was variable and intermittent in its density. The visibility between the two vessels immediately preceding the collision emergency was approximately a thousand yards. The "Chicago" had competent and vigilant lookouts stationed at the bow and on the bridge.

## III.

The "Chicago" was making 173 revolutions, 18 knots, and was on course  $350^{\circ}$  true shortly before 8:00 o'clock when she sighted a vessel on her port bow, afterwards found to be the "Albion Star", proceeding in the same general direction. Her engines were then stopped for several minutes; her speed had been reduced to 5 or 6 knots when a change of course  $20^{\circ}$  to the left was ordered. This change was about completed and she [62] was steadying on her new course ( $330^{\circ}$ ) when her navigating officers sighted the "Silverpalm" at a distance approximately 1000 yards and bearing about  $20^{\circ}$  on the "Chicago's" port bow. The "Silverpalm's" officers sighted the "Chicago" at approximately the same distance, the "Chicago" bearing about 2 points on the "Silverpalm's" starboard bow. The courses of the two vessels then intersected.

## IV.

The "Silverpalm" was making a speed of approximately 13½ knots when she sighted the "Chicago". The "Silverpalm" attempted to stop her engines immediately after sighting the "Chicago", but, owing to the design of her engines, could not reverse them during the two minutes which elapsed between the first sighting and the collision. She struck the "Chicago" at a distance of about 70 feet from the "Chicago's" stem at an angle of 40°, the "Silverpalm" having a speed of approximately 11 knots at the moment of impact. She was using a right rudder at the time of impact. She did not make a prompt or effective use of her rudder during the two minutes preceding the collision.

## V

At the moment of sighting the "Silverpalm", the "Chicago" was making a speed of between 8 and 9 knots. On observing the speed of the "Silverpalm" and that her course, crossing the "Chicago's" bow, did not appreciably change, the "Chicago's" navigating officer reversed her engines full speed astern and put her rudder hard right. At the moment of collision, the "Chicago's" course had changed more than 20°, and she was either stopped or almost stopped. Her maneuver averted the greater disaster, which would have resulted, had the impact occurred further aft.

## VI

When the "Chicago" was sighted, the "Silverpalm" was maintaining a speed such that she could not be brought to a [63] stop in less than thirty-five hundred feet which was in excess of the limits of visibility. This speed was immoderate in view of the existing weather conditions, and her ability to stop and reverse her engines.

## VII

The "Chicago" was maintaining a speed such that she could be brought to a stop within the limits of visibility. She was in fact either stopped, or almost stopped at the moment of collision, and had travelled less than three hundred yards between the moment the "Silverpalm" was sighted and the moment of collision. Her speed was moderate in view of the existing weather conditions and her power to stop and reverse her engines.

## CONCLUSIONS OF LAW

From the foregoing Findings of Fact, the Motorship "Silverpalm" is found to be solely at fault for the collision, and the Cruiser "Chicago" is exonerated. Let interlocutory decree be entered for libelants, as prayed in the Amended Libel. The matter is hereby referred to United States Commissioner Ernest E. Williams, as Special Master, to take testimony and ascertain the amounts due to the libelants. Upon the issues made by the cross-libel

and answer thereto, let decree be entered for the cross-respondents.

HAROLD LOUDERBACK,  
United States District Judge.

(Admission of Service)

[Endorsed]: Filed June 27, 1934. [64]

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[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Thursday, the 12th day of July, in the year of our Lord one thousand nine hundred and thirty-four.

PRESENT: the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Causes.—No. 21665-L, 21666-L, 21713-L.]

(ORDER DENYING PETITION FOR RE-  
HEARING)

These causes came on regularly for hearing of the petition of the Silver Lines, Ltd., et al, for rehearing. Joseph Geary, Esq., Proctor for the Silver Lines, Ltd., Harold M. Sawyer, Esq., Proctor for the Hayward Young & Co., and Miss Esther B. Phillips, Asst. U. S. Atty., were present. Said motion was argued by all parties, submitted, and ordered denied. An Interlocutory Decree was thereupon filed and entered. [65]

[Title of Court.]

AT A STATED TERM of the Southern Division of the United States District Court for the Northern District of California, held at the Court Room thereof, in the City and County of San Francisco, on Saturday, the 9th day of February, in the year of our Lord one thousand nine hundred and thirty-five.

PRESENT: the Honorable HAROLD LOUDERBACK, District Judge.

[Title of Cause.—No. 21666-L.]

(ORDER FOR SEVERANCE)

Upon motion of Miss Esther B. Phillips, Asst. U. S. Atty., and it appearing that no objection has been made thereto, it is ordered that an order of severance be entered herein, in accordance with the written order this day signed and filed. [66]

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[Title of Court and Cause.—No. 21666-L.]

ORDER OF SEVERANCE

This cause came regularly on to be heard on March 13, 1934, the libelant and cross-respondent, UNITED STATES OF AMERICA, appearing by its attorneys, H. H. McPIKE, United States Attorney, ROBERT L. McWILLIAMS, Assistant United States Attorney, and ESTHER B. PHILLIPS, Assistant United States Attorney, and respondent and cross-libelant appearing by its attorneys, Messrs. LILLICK, OLSON & GRAHAM, IRA S. LIL-

LICK and JOSEPH J. GEARY. Said above-entitled cause was by order made November 25, 1933, consolidated with the following cause:

“In the Matter of the Petition of Silver Line, Ltd., a corporation, owner and operator of the British Motorship “Silverpalm”, for exoneration from or limitation of liability, No. 21697-L.”

IT FURTHER APPEARS that on March 13, 1934, motion [67] was made by the libelant and cross-respondent that the questions of liability involved in the above-entitled cause

“United States of America, Libelant, vs. British Motorship “Silverpalm”, Respondent, No. 21666-L,”

and cross-libel therein, be considered and decided separately from the issues involved in the

“Petition of Silver Line, Ltd., a corporation, owner and operator of the British Motorship “Silverpalm” for exoneration from or Limitation of Liability, No. 21697-L,”

in so far as said latter suit involves a petition for limitation of liability.

IT FURTHER APPEARS that on March 30, 1934, the taking of evidence on the issues involved in the above-entitled cause—No. 21666-L—was concluded, and said cause was thereafter continued to April 23, 1934, for argument upon the issues involved therein, and that thereafter briefs were filed and said cause was submitted on May 8, 1934, to the court for decision.

IT FURTHER APPEARS by the minutes, records and proceedings of this court that on June 19, 1934, the above-entitled court made its order, duly entered in the minutes of said court, directing the entry of an interlocutory decree for libelant in the above-entitled matter, and dismissing said cross-libel, upon findings of fact and conclusions of law to be made.

IT FURTHER APPEARS by the minutes, records and proceedings of this court that on June 27, 1934, findings of fact and conclusions of law in the above-entitled cause—No. 21666-L—were duly made by this court and filed. [68]

IT FURTHER APPEARS by the minutes, records and proceedings of this court that thereafter the respondent vessel, British Motorship "Silverpalm", and cross-libelant, SILVER LINE, LTD., filed its petition for rehearing of said issues, and that said petition for rehearing was heard and denied on July 12, 1934.

IT FURTHER APPEARS by the minutes, records and proceedings of this court that on July 12, 1934, an interlocutory decree was duly entered in the records of this court in favor of the libelant, UNITED STATES OF AMERICA, and against respondent, and dismissing said cross-libel, and that thereafter, within the time required by law, to-wit, on July 25, 1934, an appeal was taken from said interlocutory decree by said British Motorship "Silverpalm" and said SILVER LINE, LTD.

AND IT FURTHER APPEARS that by accident and oversight no written order in said case

“United States of America, Libelant, vs. British Motorship “Silverpalm”, Respondent, and Silver Line, Ltd., Cross-libelant, vs. United States of America, Cross-Respondent, No. 21666-L,”

was made severing said case from the case of

“Petition of Silver Line, Ltd., a corporation, owner and operator of the British Motorship ‘Silverpalm’, for exoneration from or Limitation of liability, No. 21697-L,”

whereas, in fact, said cases were severed as hereinabove shown:

IT FURTHER APPEARING that the evidence in Case No. [69] 21666-L above was introduced pursuant to stipulation, that said evidence was also for use in Case No. 21697-L;

NOW, THEREFORE, on motion of H. H. McPIKE, United States Attorney for the Northern District of California, appearing by ESTHER B. PHILLIPS, Assistant United States Attorney, made on the 5th day of February, 1935, that an Order of Severance be entered Nunc Pro Tunc as of July 12, 1934, in conformity with said interlocutory decree made and entered on said July 12, 1934, in the above-entitled Case No. 21666-L, and the Court now being fully advised in the premises, said motion is hereby granted, subject, however, to the proviso that all evidence introduced in said Case No. 21666-L is considered to be in evidence in Case No. 21697-L.

IT IS HEREBY ORDERED that Order of Severance in said case be entered Nunc Pro Tunc as of July 12, 1934.

DONE in open Court this 9th day of February, 1935.

HAROLD LOUDERBACK,  
United States District Judge.

[Endorsed]: Filed Feb. 9, 1935. [70]

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[Title of Court and Cause—No. 21666-L.]

INTERLOCUTORY DECREE.

The above-entitled cause came on for trial on the 13th day of March, 1934, H. H. McPIKE, United States Attorney, ROBERT L. McWILLIAMS, Assistant United States Attorney, and ESTHER B. PHILLIPS, Assistant United States Attorney, appearing as proctors for Libelant and cross-libelant, UNITED STATES OF AMERICA, and for co-libelants, ETHEL G. MacFARLANE, as Administratrix, MARIAN B. CHAPPELLE, as Administratrix, JOSEPH A. OEHLERS, LOUIS GIARD and BANK OF AMERICA NATIONAL TRUST & SAVINGS ASSOCIATION, as Special Administrator, and MESSRS. IRA. S. LILLICK and JOSEPH J. GEARY appearing as counsel for Respondent and Cross-Libelant, the SILVER LINE, LIMITED. Witnesses in behalf of libelants and cross-libelants having been sworn and examined,

and documentary evidence having been introduced, and the cause [71] thereafter having been argued and submitted to the Court for consideration and decision, and the Court, having rendered his Findings of Fact and Conclusions of Law, it is now in conformity with said Findings and Conclusions.

ORDERED, ADJUDGED and DECREED that the collision mentioned in the pleadings, and the losses resulting therefrom, were caused solely by fault and negligence upon the part of the Motorship "SILVERPALM"; and it is further

ORDERED, ADJUDGED and DECREED that the libelants do have and recover their damages against said Motorship "SILVERPALM" with costs; and it is further

ORDERED, ADJUDGED and DECREED that the claims of the libelants be referred to the United States Commissioner, ERNEST E. WILLIAMS, to ascertain and report the amount of the damages sustained by libelants.

HAROLD LOUDERBACK

United States District Judge.

(Admission of Service.)

[Endorsed]: Filed and entered July 12, 1934.

[72]

[Title of Court and Causes—Nos. 21665-L, 21666-L,  
21697-L, 21713-L.]

TUESDAY, MARCH 13, 1934.

Counsel Appearing:

For the United States of America:

HON. H. H. McPIKE, United States Attorney;  
ROBERT L. McWILLIAMS, Esq., Ass't U. S.  
Attorney;

ESTHER B. PHILLIPS, Ass't U. S. Attorney.

For the Silver Line, Ltd.:

IRA S. LILLICK, Esq.

JOSEPH J. GEARY, Esq.

For Cargo Claimants:

HAROLD M. SAWYER, Esq.

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The COURT: You may proceed in the matter of United States of America v. Silver Line, Ltd.

Mr. LILLICK: We would like an order excluding witnesses, except Captain T. A. Ensor, who is the owner's representative, and who will be a witness.

Miss PHILLIPS: Your Honor, I agree that the witnesses should be excluded. I should like, however, permission of the Court to [73] have present during the trial Captain Frank B. Freyer, who was formerly Judge Advocate of the Navy and who is now captain in charge of the United States Hydrographic Office at San Francisco; he was not a

witness to any of the facts, but I expect to call him prior to the close of the case as an expert witness. I would like to have him remain during the trial.

The COURT: He has assisted in the preparation of the case?

Miss PHILLIPS: Yes, your Honor.

The COURT: With those exceptions such will be the order. The remaining witnesses will remain outside of the court-room until needed.

(Thereupon the witnesses retired, as ordered.)

Miss PHILLIPS: Your Honor has before you four cases arising out of a collision occurring on the 24th of October, 1933, between the United States Cruiser "Chicago" and the British Motorship "Silver Palm." There are four suits. The Silver Line, the owner of the "Silver Palm," sued the United States for damages. The United States, with several co-libelants, sued the "Silver Palm" for damages. The owner of the cargo shipped on the "Silver Palm" sued both the United States and the "Silver Palm" for damages to cargo, and, last of all, the Silver Line filed a petition to limit its liability for damages to the value of the "Silver Palm" and its pending freight, or to be exonerated entirely from liability.

All of these cases are at issue, and in the interest of orderly arrangement of proof counsel for the private interests and counsel for the Government have agreed that the cases should be presented as follows, subject, of course, to your Honor's

pleasure: First, the suit of United States v. Silver Palm will be tried. In that suit the United States claims damages suffered because of the damage to the "Chicago." In addition, it claims damages as a trustee for approximately sixty officers and men on board the [74] "Chicago" who lost personal effects in the collision. In addition, the widow of Lieut. Chappelle, who was killed in the collision, is a co-libelant; the mother of Lieut. MacFarlane, who was killed in the collision, is a co-libelant. The Bank of America Trust & Savings Association, special administrator in the State of California of the estate of John W. Troy, is a co-libelant, presenting the claim for the benefit of his widow and five minor children.

Two men on board the "Chicago" who suffered personal injuries are also co-libelants.

In this suit the Silver Line filed its answer and in addition filed a cross-libel against the United States, claiming damages to the "Silver Palm."

Thus in this suit all of the claims arising out of the collision of the two vessels are presented, and the rights of the various persons who were injured in the collision are presented, except the claim of the cargo owner. However, the cargo owner, by stipulation, has had his suit consolidated, so that the proof showing the navigation of the two vessels is presented to your Honor, bearing in whatever way it bears upon the rights of the cargo owners, and the cargo owners will put in only the special

proof with respect to the ownership of its cargo.

Following upon the evidence upon navigation the Silver Line will proceed with its evidence bearing on its right to limit liability to the value of the "Silver Palm" and its freight pending, providing, of course, that it is found that there is liability. The question of liability for the collision and the right to limit need not be decided, and the navigational questions, until the close of both cases, whatever your Honor decides upon that. I am merely pointing out that the Silver Line's petition for limitation will follow upon the heels of the navigational issues. [75]

The collision happened upon the high seas at a point approximately twenty miles from the coast of California. The "Chicago" was bound from the port of San Pedro to the port of San Francisco. The "Silver Palm" was bound from San Francisco to New Orleans and ports in South Africa. The wind and sea presented no navigational difficulties. The wind was about Force 3, approximately 12 miles an hour. The sea was fairly smooth. The weather was somewhat foggy, rather patchy, and intermittent in its density.

It is the contention of the United States that the "Chicago" sighted the "Silver Palm" on her port side at about two points—if I may illustrate by my own position, we would say that the "Silver Palm" was sighted by the "Chicago" approximately at the angle at which I am pointing my left arm, that is, on the left at about an angle of twenty

degrees. It is difficult to estimate distance between two moving objects upon the sea when there is no fixed point of reference. The officer of the "Chicago," however, estimated the distance between the two ships at the moment the "Chicago" sighted it was certainly not less than 700 yards, and certainly not more than 1000 yards; within that range the two vessels sighted each other.

The commanding officer of the "Chicago" recognized the "Silver Palm" as a freighter, going at a high rate of speed for a freighter, and the two courses of the vessels intersected, they were collision courses; in other words, at the moment he sighted them he judged that the best maneuver for the "Chicago" to take to avoid disaster was to take headway off of the ship as rapidly as possible and to turn right. He therefore ordered his engines full speed astern and a hard right rudder. Your Honor can see the "Silver Palm" coming in this direction, the "Chicago" maneuvered to turn right and stop, in that way to avoid getting at the point of intersection before the two vessels should collide. [76]

The "Silver Palm" came on at a high rate of speed. She struck the "Chicago" on her port bow at a distance of about 68 to 70 feet from the extreme point of the "Chicago's" bow, penetrating the "Chicago" to a distance of approximately 30 feet. The dimensions of the gash in the "Chicago" are astoundingly large, I would not attempt to give the exact measurements at this time. Three lives

were lost. The damage to both vessels was serious.

The Government's libel is based on the theory that the "Chicago" was maneuvering at a moderate rate in a fog. Like all cases of collisions, speed can not be fixed to the last foot and inch. We think that the evidence is going to show that the "Chicago" was operated at less than 10 knots, well under 10 knots, that she could stop within the limits of visibility, or within half the limits of visibility, and that she did stop.

We contend that the "Silver Palm" came on, that she was operated when she first sighted the "Chicago" at a maximum speed in the fog between  $13\frac{1}{2}$  and 14 knots. At the time she struck the "Chicago" she was running at approximately 11 knots, possibly more, but at any rate at 11 knots.

We think the evidence is going to show that the "Silver Palm" was so constructed that her engines could not reverse until the engines had practically come to a stop. The comparison that naturally occurs to one's mind is an automobile operated without a brake. We think the evidence is going to show that when the "Silver Palm's" captain recognized that he should take speed off his vessel, all he could do was to turn off the power and let her coast, and that this accounts for the speed of 11 knots at the time she struck the "Chicago."

We also expect the evidence to show that the captain of the "Silver Palm" did not use his helm to avoid collision. I shall not go into further

details on the evidence, I will let the "Chi- [77] cago's" witnesses tell her story.

Would you like to make a statement, Mr. Lillick?

Mr. LILLICK: Only a word. Miss Phillips' statement, like her usual statements, was a very fair one. The only criticism I have to offer with respect to it is that Miss Phillips stated what she expected to prove with reference to the "Chicago's" speed. I think I should tell the Court that we expect to prove that the "Chicago" was operating at her standard speed of 18 knots an hour when the "Silver Palm" came into sight, and that instead of being at a stop when the two vessels came together, at the actual moment of the impact, her own witnesses will testify that she was going then at a rate of even five knots an hour, though about a minute before that she had put all of the power she had in reverse.

The COURT: I think I will have to continue the session over until one o'clock. I had a slight accident and hurt my knee. My pain is so much more than I anticipated when I came on the bench that I do not think I could bear it if I did not have it attended to. I want to speak to my doctor about it. I do not think there is anything serious about it, but I notice sitting up here the pain was so severe that it was all I could do to follow you. I think it will be all right at one o'clock. We will not lose so much time by doing that. I think I can have it attended to by that time.

Mr. LILLICK: May I impose upon your Honor a moment longer—I am only making this suggestion for myself—I am in such a situation in the office that if it is possible for the Court now to let us know whether we may expect adjournment promptly at twelve o'clock and promptly at four o'clock it will be a very great convenience.

The COURT: Unless both sides request it, it is my opinion [78] if we have four hours of real intensive work it is sufficient. Do you want to run longer?

Miss PHILLIPS: It sometimes happens that a witness who is on the stand at four o'clock, with a few more minutes we could finish with the witness.

The COURT: Do you want to run longer hours?

Miss PHILLIPS: I don't know as it will be necessary to run until five o'clock every day, but I think occasionally we will be able to finish with a witness by running a half hour after four o'clock.

The COURT: If at four o'clock a witness is on the stand and he can probably be concluded in the course of the next half hour we will proceed until that particular witness is concluded. Other than that, we will adjourn at four. We will start, I think, at one o'clock.

(A recess was here taken until one o'clock p. m.)

[79]

AFTERNOON SESSION—1 o'clock P. M.

ROB R. McDONELL,

called for the United States, sworn:

Miss PHILLIPS: Q. Mr. McDonell, what is your business?

A. I am a ship draftsman at Mare Island Navy Yard.

Q. How long have you been in the business of ship drafting?

A. Twenty-eight years.

Q. You have in your hand there a model of a ship. Do you know whether this is a model of an existing ship?

A. This model is an almost exact copy of the U. S. S. Chicago.

Q. How do you know that that is a true model of the Chicago?

A. Being personally acquainted with the plans under which this vessel was constructed and having those plans at my command, I have checked this model and checked it very carefully with the official plans which built the ship and I might say that it is visually accurate.

Q. You have not pretended to put in the internal machinery, the internal arrangement of the engines and the like?

A. No, nothing has been shown but what would appear from a side view.

Q. What is that black streak up by the bow, what is that?

(Testimony of Rob R. McDonell.)

A. The black represents damaged areas that was occasioned by this collision.

Q. How do you know that that black streak is an accurate reproduction visually of the extent of the damage?

A. When this ship arrived at Mare Island after this collision I was instructed to take the official plans of the vessel and go down and make an accurate drawing showing the extent of the damage. One plan we have shows exterior of the ship together [80] with its relation to all of the interior structural work, and it was an easy matter to take that plan and make an exact copy of the damaged area on the ship. That plan was just four times the scale of this model, so I took a piece of paper and reduced the damaged area to the scale of this model and then with my rule I located this paper exactly in the same position, bent it on the model, drew a line around it and then painted the area black.

Q. What is the scale on which this model is made, might I ask?

A. One sixteenth of an inch equals one foot.

Miss PHILLIPS: I offer this in evidence as Government's Exhibit 1.

The COURT: It will be received as Government's Exhibit 1.

(The model was marked "Government's Exhibit 1.")

(Testimony of Rob R. McDonell.)

Miss PHILLIPS: Q. Mr. McDonell, before leaving this model, have you in mind the dimensions of this damaged area?

A. Yes.

Q. In stating the dimensions, I do not mean plate by plate; but give the general dimensions of that area?

A. The length at the top along the deck was 56 feet. The depth as you would look at the model would be 46 feet deep. The irregular shape is not clear to describe.

Q. You have given me the outside dimensions of that?

A. Yes.

Q. Continue.

A. The extreme depth vertically of 46 feet and that depth in this ship was approximately to the center line, even past the center line in some cases, the greatest depth being fourteen feet.

Q. You have here on the table another model. Can you tell us something about that model?

A. This model is made from a photograph and the registered dimensions of the ship which was [81] given in Lloyd's Registry. In that way we were enabled to make the model approximately the length and breadth and depth as given in the official registry.

Q. Of what ship?

A. Of the Silver Palm.

(Testimony of Rob R. McDonell.)

Q. You did not have any blueprints for making that or for checking that model?

A. We had none.

Q. Tell me what dimensions now have you taken of that ship as you take them from Lloyd's Registry?

A. The length given in Lloyd's Registry is 450.9 feet, but that represents the length between perpendiculars. The overall length has to be calculated, and according to the rules given in Lloyd's Registry, it would add approximately 18 feet to that for overall.

Q. What about the width and depth?

A. The depth and width are visually correct, although measured on a 1/16th of an inch scale, it would scale 1/8th of an inch short of the width, and the depth, when corrected.

Q. If you made allowance for an overall length in addition to the length between perpendiculars would that model be a little short or a little long or exactly right with the overall length?

A. The model would be 1/8th of an inch short.

Q. What scale is that model made to?

A. This model is made on the scale of 1/16th of an inch to the foot, the same as the Chicago.

Q. Looking at the bow of the ship, do you know what this black streak about the bow represents?

A. The black streak represents an approximation of the damage on the Silver Palm as we could get it from photographs published in the daily papers.

(Testimony of Rob R. McDonell.)

Q. It does not pretend to be accurate?

A. Not accurate. One thing further. One of our representatives measured the damaged area from the bow aft, which corresponds to the amount [82] shown on this model.

Q. Tell me about the shape of the bow. Does that represent the exact shape of the Silver Palm?

A. It should be much fuller and it should be somewhat higher, perhaps a quarter of an inch, looking at it visually.

Miss PHILLIPS: I will offer this in evidence as Government's Exhibit No. 2 subject to the limitation that we do not offer it as an exact reproduction. We are offering it as an approximation for the court's assistance in handling the two ships and visualizing them.

Mr. LILLICK: May I ask a question about it preliminarily?

Miss PHILLIPS: Yes, you may cross-examine upon it.

Mr. LILLICK: Q. Mr. McDonell, why did you show the bow of the Silver Palm as sharp as you have?

A. I had nothing to do with the making of the model. We had no other data on hand except the photograph as to the shape of the model.

Q. But you have just stated that the bow of the Silver Palm is not only much more blunt, but also higher. Why was the model made as you made it with the bow indicated as sharp as it is?

(Testimony of Rob R. McDonell.)

A. I have no data on the instructions given the mechanics to make that model beyond the fact that it was a photograph.

Q. Well, there were instructions given to someone to make that bow as sharp as it is?

A. Yes, sir.

Q. Knowing that the bow of the Silver Palm was very blunt?

A. I judged it to be more blunt by seeing a photograph, one of these photographs, myself.

Q. Did you ever see the Silver Palm?

A. I never did.

Q. The photographs which you saw, which you say gives you the material from which you changed the model, indicate a very [83] blunt bow on the Silver Palm, did it not?

A. It did.

Q. You have no explanation of why the Government in preparing that model prepared it in such fashion as to show as sharp a bow as is shown?

A. I have none.

Miss PHILLIPS: Q. What photograph was it that you saw which indicated to you that the bow of the Silver Palm was more blunt than that, not as sharp?

A. I am sorry to say that I could not recall the magazine. I could find it. It was in a magazine article, but I could not recall the name.

Mr. LILLICK: We object to that as not a proper exhibit to put before the Court.

(Testimony of Rob R. McDonell.)

Miss PHILLIPS: It is only offered for the convenience of the court.

Mr. LILLICK: I certainly object to the Government having given us a model of the vessel which they not only had time and opportunity to obtain the particulars on, but they have prepared it in such fashion as to show such a sharp bow.

Miss PHILLIPS: We would have been very glad to have used blueprints of the Silver Palm in preparing this model, but so far as I know we could find none showing her exact dimensions.

The COURT: How long does it take to prepare one of these?

Miss PHILLIPS: Several weeks, that is, the two models.

Mr. LILLICK: This is, of course, no criticism of your office. We could have furnished blueprints of the Silver Palm which was here for quite a long time if they had been demanded. However, that does not alter our present situation before the court. I have no objection to the model being introduced with the understanding that it shall be taken by the court only as an indication of the length of the Silver Palm.

Miss PHILLIPS: I believe the witness' testimony goes [84] further than that.

Miss PHILLIPS: Q. What check did you make of the width of the Silver Palm on this model, Mr. McDonell?

A. The check I made was amidships.

(Testimony of Rob R. McDonell.)

Q. You observed what?

A. It is approximately one eighth inch smaller on this model than it would be if corrected.

Q. That is your check with the Lloyds Register dimensions upon that?

A. Yes.

Q. What about the deck?

A. The deck is accurate amidships.

Miss PHILLIPS: That is all we are offering it for, your Honor, as being an exemplar showing the approximate length, width and breadth. I thought I made it clear from the witness' testimony that that is all we are offering it for. If counsel objects I have no desire at all to introduce it. I thought it would be of assistance to the court. If counsel objects, I will withdraw it. Are you through with your examination?

Mr. LILLICK: Yes.

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JAMES WILLIAM EMERSON,

called for the United States, sworn:

Miss PHILLIPS: Q. What is your business, Mr. Emerson?

A. I am a photographer for the Navy.

Q. Where are you stationed?

A. Mare Island Navy Yard.

Q. Did you take any pictures of the United States Cruiser Chicago within the last six months?

A. Yes.

(Testimony of James William Emerson.)

Q. Will you state briefly the occasion on which you took those pictures?

A. It was due to the damaged condition of the Chicago and the necessity of taking pictures to be able to show the state of the ship as it came into the Navy Yard.

Q. From what point did you take them?

A. From the dock side, [85] most of the time, but also at the arrival of the ship coming into the Navy Yard.

Q. Are these prior to making any repairs?

A. All of them prior to making repairs.

Mr. LILLICK: I shall be glad to stipulate without an examination of the photographs, that the photographs that you have just handed me are photographs taken of the Chicago after the collision and from the very points from which they were apparently taken unless you care to go a little further.

Miss PHILLIPS: Yes. I would like to have the witness describe them a little further.

Q. The first picture I am handing you was taken where, and as you identify them will you hand them to the court?

A. This first picture was taken when she arrived in the Navy Yard in the morning.

Miss PHILLIPS: I would like to have the whole group marked 2 and each one followed with a letter.

The COURT: I will do that, marking a 2 with an A on this one.

Miss PHILLIPS: Q. And the second one is what?

(Testimony of James William Emerson.)

A. This is a little closer view of the ship about to come into the drydock.

Q. The other pictures are taken from various points, are they?

A. From the dock, before the water was pumped out, and after the dock had been completely pumped out.

Q. Will you pick out some of the pictures showing her being taken at the dock before the water was pumped out and some which show after the water was pumped out at the drydock?

A. This is the first picture after she got into the drydock.

Miss PHILLIPS: I will ask that this picture be marked Government's Exhibit 2-C. [86]

(Three photographs described above were marked "Government's Exhibtis No. 2-A, 2-B and 2-C.")

Miss PHILLIPS: Q. That was before the water was taken out?

A. Yes.

Q. The picture I am handing you now is what?

A. That was taken about an hour after the last picture.

Q. While the water was in the course of being pumped out?

A. Yes.

Miss PHILLIPS: This will be 2-D.

(The photograph was marked "Government's Exhibit 2-D")

Miss PHILLIPS: Q. The picture I am now handing you is what?

(Testimony of James William Emerson.)

A. That is when the dock was finally pumped down.

Q. And the ship raised?

A. The ship raised in the ways.

Miss PHILLIPS: This will be 2-E.

(The photograph was marked "Government's Exhibit 2-E")

Miss PHILLIPS: Q. And the next picture is what?

A. That is the same time, but from a little different angle.

Miss PHILLIPS: This will be 2-F.

(The photograph was marked "Government's Exhibit 2-F")

Miss PHILLIPS: Q. The picture I am now handing you is what?

A. Tsis picture is a copy from a mosaic; it was impossible to get high enough up to show all of the damage so we had to take one or two views and make a mosaic and copy the mosaic.

Q. Is that looking down?

A. Straight down.

Q. Straight down into the hole?

A. A vertical view.

Q. Downward?

A. Yes.

Miss PHILLIPS: That will be 2-G.

(The photograph was marked "Government's Exhibit 2-G")

(Testimony of James William Emerson.)

Miss PHILLIPS: The other pictures, your Honor, I will check off in order as 2-H, 2-I, 2-J.

(The photographs were marked "Government's Exhibits 2-H, [87] 2-I and 2-J.)

Miss PHILLIPS: Q. The picture I am now handing you, what does that represent?

A. That represents the view looking aft, showing very plainly where the bow of the ship came to and finally stopped.

Q. Showing the gun turret?

A. Showing the gun turret.

Miss PHILLIPS: That will be 2-K.

(The photograph was marked "Government's Exhibit 2-K")

Miss PHILLIPS: Q. This one, 2-L, is what?

A. That is a similar view, but a slightly different angle.

Q. Also showing the gun turret?

A. Also showing the gun turret.

(The photograph was marked "Government's Exhibit 2-L")

Miss PHILLIPS: Q. The next picture following shows the same?

A. Yes.

Q. The last picture which I am showing you shows what?

A. That shows a view looking from the dock forward and showing the damage at the forward end.

Miss PHILLIPS: I will offer those as 2-M and N.

(The photographs were marked "Government's Exhibits Number 2-M and 2-N").

(Testimony of Raymond D. Strohmeier.)

Miss PHILLIPS: That is all. Do you wish to cross-examine?

Mr. LILLICK: No questions.

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RAYMOND D. STROHMEYER,

called for the United States, sworn:

Miss PHILLIPS: Q. Mr. Strohmeier, what is your business?

A. Commercial photographer.

Q. Did you take any pictures of a motorship called the Silver Palm?

A. I did.

Q. On what occasion?

A. When she was wrecked and tied up [88]

Q. Do you remember the date?

The COURT: Do you have to refresh your memory from your photographs?

Miss PHILLIPS: Q. I will show you these photographs, Mr. Strohmeier. Are these the photographs that you took?

A. Yes.

Q. What date were they taken?

A. They were taken on October 25, 1933.

Q. You dated them on the photographs, did you?

A. Yes.

Q. Whereabouts was the Silver Palm at the time you took them?

A. Tied up at Pier 46.

Q. Was it in the morning or in the afternoon?

A. In the morning.

(Testimony of Raymond D. Strohmeyer.)

Q. I will show you a photograph and ask you to tell us what angle that was taken from and what position you were standing in taking it?

A. This was taken from the dock and taken on the port side looking toward the bow of the boat.

Miss PHILLIPS: I will offer that in evidence as Exhibit 3-A.

The COURT: It will be so received.

(The photograph was received in evidence "Gov't. Exhibit 3-A")

Miss PHILLIPS: Q. The picture that I am now showing you, from what angle was that taken?

A. That was taken from the passenger landing and shows the port bow of the Silver Palm.

Mr. PHILLIPS: I will offer that in evidence as Government's Exhibit 3-B.

The COURT: It will be so received.

(The photograph was marked "Government's Exhibit 3-B")

Miss PHILLIPS: Q. The picture I now show you was taken from where?

A. This was taken from the dock and shows the bow of the boat and the port side.

Miss PHILLIPS: I offer that in evidence as Government's [89] Exhibit 3-C.

The COURT: It will be so received.

(The photograph was marked "Government's Exhibit 3-C")

Miss PHILLIPS: Q. The picture I am now showing you was taken from where?

(Testimony of Raymond D. Strohmeier.)

A. This was taken up by the forecastle head and shows the port side.

Q. Looking in what direction?

A. Looking forward.

Q. Looking towards the stem?

A. Looking towards the stem or bow of the boat.

Miss PHILLIPS: That will be Government's Exhibit 3-D.

The COURT: It will be so received.

(The photograph was marked "Government's Exhibit 3-D")

Miss PHILLIPS: Q. This picture that I am now showing you was taken where?

A. This picture was taken on the forecastle, star-board side, looking forward.

Miss PHILLIPS: That will be Exhibit 3-E.

(The photograph was marked "Government's Exhibit 3-E")

Miss PHILLIPS: Q. This last picture was taken from where?

A. That picture was taken from the dock and shows the port side forward.

Q. Was that taken in a position looking down or up or looking forward or looking down, or what was it?

A. This was taken at the dock looking up.

Miss PHILLIPS: That is the last picture of this series here, and will be 3-F. This is looking from the dock forward?

A. From the dock forward.

(Testimony of Raymond D. Strohmeier.)

Q. Silghtly beneath the loom of the ship?

A. This was on the dock to which she was tied.

Miss PHILLIPS: That will be Exhibit 3-F, I believe.

The COURT: It will be so received. [90]

(The photograph was marked "Government's Exhibit 3-F")

Miss PHILLIPS: You may cross-examine.

Mr. LILLICK: No questions.

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HARRIS LANING,

called for the United States, sworn:

Miss PHILLIPS: Q. What is your occupation?

A. Naval officer and vice admiral in the Navy, commanding cruisers of the scouting force of the United States Fleet.

Q. How long have you been in the Navy?

A. Since May, 1891.

Q. How long have you been in your present rank?

A. Since last May.

Q. Are you a graduate of Annapolis?

A. I am.

Q. Will you just give us briefly something about your experience in the command and the handling of ships?

A. I have gone through the various grades of the Navy, and I have had to handle ships of all classes

(Testimony of Harris Laning.)

for the last thirty-nine or forty years,—I have commanded destroyers and ships up to battle ships, I have had the command of a destroyer squadron, of a battle ship division and, of course, in my present command I have commanded heavy cruisers.

Q. Were you aboard the *Chicago* on the morning of October 24, 1933?

A. I was.

Q. In what capacity were you aboard the cruiser *Chicago*?

A. The *Chicago* was my flagship and I was in command of the cruisers of the scouting fleet of which the *Chicago* was one.

Q. Did you see the collision?

A. I did.

Q. Before I have you actually describe the circumstances of the collision, Admiral Laning, I would like to ask you did you have anything to do with the handling or maneuvering or navigation of the ship or as to her safe conduct? [91]

A. I did not.

Q. Now will you please relate to the court all that you saw and heard in connection with the collision? Let us go back for a half hour or so preceding the collision and give us an account of what you saw and heard?

A. About 7 o'clock in the morning of October 24th I was on the bridge of the *Chicago* leading a column with three other ships in it, making a passage from San Pedro Harbor to San Francisco

(Testimony of Harris Laning.)

Bay. At that time I sent a signal releasing the Chicago from the formation and turning the rest of the ships over to the next senior in command. I directed the Chicago to proceed independently as it was to go to Oakland, California, and enroute was to conduct some tests ordered by the Bureau of Steam Engineering. At that time, about 7 o'clock in the morning, the weather was materially improving. We had had a foggy night, but at that time the fog had broken up very materially. The sun was shining through; there was only fog in patches, and between the patches it was very clear, and the visibility would be several miles. I left the bridge, having released the Chicago, about 7:15 and went to my cabin for breakfast. I had eaten my breakfast and was sitting there reading the morning news sheet when I noticed that the Chicago which had been sounding one blast on its fog whistle started sounding two blasts on the fog whistle, which indicated that the engines were stopped. I arose from the table, not in any hurry, went over to the door on the port side of my cabin that looked out on the water and noticed the fog was not very thick on that side, although some fog was visible.

The COURT: That was on the port side?

A. The port side, and I looked at the water, and I could see [92] that the Chicago was slowing down materially as it went through the water. I stood there thinking about this especially and about that time I heard the Chicago sound two blasts again on

(Testimony of Harris Laning.)

its fog whistle and I thought I would just go up on the bridge to see what was going on. I walked leisurely into my stateroom, which is just forward of the cabin, got my cap, walked back through the main cabin and the passageway up to a hatch, went up two decks to the flag bridge, which is the admiral's bridge, and the place from which the admiral controls the ship; the bridge is directly under the navigating bridge. Reaching the flag bridge I at once went over to the starboard side of that bridge. As I stood on the starboard side I looked down into the water and I could see that the Chicago was then going very slowly. I thought at that time she was making between four and five knots.

Mr. LILLICK: I beg your pardon a moment. I am sorry to interrupt, but may it please the court we would like the witness not to tell us what he thought. I have withheld objection to one of the other points that was objectionable. The admiral gave his conclusion. We wish, of course, only what he saw. I am sure Miss Phillips will agree with me on it.

Miss PHILLIPS: In other words, you contend he can not estimate——

Mr. LILLICK: I object to the Admiral telling us what he thought when he looked out. He was about to say "I thought".

Miss PHILLIPS: May I get the exact point. Is counsel contending that the witness on the stand can not estimate the speed of the vessel?

(Testimony of Harris Laning.)

Mr. LILLICK: No, Miss Phillips; but the witness a few moments ago said, for example, the fog whistle was blown twice—[93]

The COURT: He used the word thought. Do you think you could estimate the speed?

A. I saw the ship going through the water slowly at a speed of between four and five knots. I doubt if it had that much speed. I doubt that it had steerageway.

The COURT: What speed do you need on the Chicago do you need for steerageway?

A. For the steerageway on these ships, if it gets below four knots, you can not practically control them. They must be going through the water at about four knots or more before they answer the helm. I noted this very slow movement through the water and stood there looking around to the starboard bow and broad on the starboard bow there was a fog patch distant about a half a mile, and forward of that, and around that—

Q. Just a moment. I don't know whether I understand that broad on the starboard bow. Do you mean opposite the ship?

A. No; broad means 45 degrees on the bow or thereabouts.

Miss PHILLIPS: I think the witness could illustrate what he means by the term "broad on the port bow" provided there was another model that he could use to illustrate what he means.

(Testimony of Harris Laning.)

The COURT: Q. On the port bow, did you say?

A. On the starboard bow.

Q. On the starboard bow?

A. I was standing on the starboard side.

Q. I think I would understand it if you said it was 45 degrees, considering the ship as forming one side of that triangle.

A. Yes, from dead ahead to 45 degrees would be broad on the starboard bow.

Q. I know most of the terms, but that is a term I am not familiar with.

A. That term, your Honor, is not exact; that [94] is a general location, broad on the bow does not mean exactly 45 degrees on the bow.

Q. What does it mean, between what degrees?

A. In nautical terms if you want to describe the position of something, you see, you will say it is 10 degrees on the bow, 20 degrees on the bow and so on, until it gets around 40 and 50 degrees, and then you say it is broad on the bow.

Q. Forty to fifty degrees.

A. It is a general term. In that general direction I saw a fog patch, the edge of which was about half a mile away. I looked forward of that, and around the head of the Chicago it was very clear, I could see three or four miles. I stood there listening and looking and an enlisted man who was on lookout at that part of the deck said to me, "Admiral, the steamer we heard it right over there," and he pointed to this fog patch and I stood there lis-

(Testimony of Harris Laning.)

tening very intently and I heard the steamer whistle. After I heard the steamer whistle, shortly after, the Chicago sounded one blast on its fog whistle which indicated that it was then going ahead, and I noticed as I stood there and watched the Chicago's head started turning slowly to port. I could gauge that by the horizon ahead and by the change of this fog bank. Just at that time I heard that whistle from the fog bank a second time, and just then there emerged from the fog bank, at the point nearest to us along the forward edge of the bank, and further away, a steamer. It was very clear between me and the steamer. I could see it very distinctly. It was a mile at least away, the hull was dark, the upper works were white. It had two masts and I could see blue on the funnel. While I was looking at that steamer this lookout who was beside me on the starboard side of the flag bridge suddenly called out "Steamer Ahead!" [95] I turned my head from looking on the port side and looked ahead on the Chicago, past the jackstaff which is right on the bow and to the left of the jackstaff I saw just emerging from a little fog patch over there a ship. It was heading across the Chicago's course. I could see the starboard side of that ship, for about two-thirds of the length, and I could see that it had a very heavy bow-wave. I did not think at that time there would be any collision. I looked at the ship and it was evident that if that ship put its rudder to the right and turned to the right as that particular situation called for and the rules of

(Testimony of Harris Laning.)

the road that it would pass to the port of the Chicago and well clear. I noted the speed of the Chicago through the water at that time and it was very close to eight knots. The ship was picking up headway, but that was about the speed it was making. I stood there expecting to see that oncoming ship change course to the right and it did not do so, and I saw that if it did not there would be a collision. So, thinking I might help a little I sung out, "Sound Collision Call", but just at that time the Chicago sounded three blasts on the whistle, which indicated she was backing, and it sounded the siren which is the signal for collision. Almost immediately when this whistle sounded I felt the Chicago vibrate heavily as the engines backed and I stood there wondering whether the ship would hit or not, and it became evident that it might, but the ship on the port was beginning to draw aft on the port side of the Chicago and as I stood on the starboard side looking at it it disappeared behind the conning tower of the Chicago, which is well forward of where I stood. So I then walked over to the port side of the Chicago's bridge. On reaching the port side I at once looked [96] at this steamer approaching. It was then between a hundred and two hundred yards away. I noticed carefully to see if it changed its course to the right and it did not. It appeared to me then that if the course were changed at all it was to the left,

(Testimony of Harris Laning.)

but as the Chicago was backing very heavily and I glanced at the water and saw that it was almost dead in the water and that it might even be going astern. I thought the relative movement might make it appear to me that that other ship was turning to the left when in reality it was the loss of headway by the Chicago, but by the going astern of the Chicago it appeared that way. The ship came on. I had estimated the speed when I first saw that ship with its bow wave—I looked at that ship and I estimated it had the speed of 14 knots. When I went to the other side of the Chicago's flag bridge and looked at that ship again the bow wave was not quite so large, and I estimated the speed as it approached the Chicago as 12 knots. I had thought that ship would strike much farther aft than it did, but the backing of the Chicago brought the collision further ahead, and it struck the Chicago just forward of the forward turret. It seemed to strike at an angle with the Chicago's course around 35 to 40 degrees. It cracked in the Chicago's side until it brought up against the port forward corner of the Chicago's forward turret. Just before the impact I took a position to brace myself against the impact. I took a position so it would stop me being thrown forward, but when the impact occurred there was no feeling at all of my being thrown forward as if the Chicago were advancing, and the entire motion was sideways, the Chicago heeled over between 10 and 15 degrees to starboard. It was swung very violently to the

(Testimony of Harris Laning.)

right, so much so that [97] the ship, that was visible on our starboard hand, and after the Chicago had turned, was two points forward of its beam—that would be 70 degrees from the bow. I was on the port side looking forward across the turret, and I could see the ship coming in sight then as the Chicago swung around, it came in sight between the Chicago's conning tower and the jackstaff,—it was right over the forward turret and where the debris from the collision had been thrown up and was dropped down—I could see that ship very clearly, and it was at a distance of approximately a mile to a mile and a half. The Silver Palm came into this position against the forward turret, stopped, seemed to recede ten to twelve, about ten to twelve feet, and then closed in again. In that second collision it did not seem to do any additional damage. It came in rather slowly and brought up without any jar. The two ships then began to fall apart. The Chicago seemed to swing to the right, the Silver Palm to the left, they fell apart and paralleled each other. After that I saw the Chicago would not sink and I heard the whistles of these other three cruisers that I had left behind astern of us. They promptly came up. I sent a radio message to one of them to see if the Silver Palm needed assistance, and he sent me a radio afterwards that he had communicated with the Silver Palm and they said they did not need assistance at that time. I then formed up my ships, put the

(Testimony of Harris Laning.)

(Chicago in the lead and the others behind it, except one, the Pensacola which I left behind to see if any one was lost, to rescue them, if they could find them. and then led my ships into San Francisco Bay.

Miss PHILLIPS: Q. Admiral Laning, I wish you would point out on the ships model some of the points that you referred to. [98] Will you point out your quarters to which you have referred and then go right up to the flag bridge and show the relation of the flag bridge to the maneuvering bridge?

A. My quarters in the Chicago are in this part of the ship right here. My cabin is just abaft this point. My stateroom and bathroom were just forward of it. It was right in there that I was when I heard the Chicago whistle sound two blasts. It was at a door right there that I looked out and saw the Chicago's speed through the water visibly drop, and it was right there that I stood until I heard another stop signal on the Chicago, when I went up on this main cabin over to my stateroom, got my cap and walked back through the cabin and a short passageway to a hatch and went up to deck to the Admiral's bridge, which is right there.

Q. The flag bridge is where?

A. The flag bridge is here.

Q. Right under the foremast, is it?

A. Oh, yes.

Q. Now, pick out the maneuvering bridge?

A. The maneuvering bridge is this part here.

(Testimony of Harris Laning.)

Q. Admiral Laning, you have given several estimates of speed in the course of your narration of events. Has your training, and assignments to duty while in the Navy, given you any training in the estimating of distances and speed?

A. Decidedly so.

Q. Will you just explain to his Honor first the training of an estimate of distance?

A. Everything we do in maneuvering ships in formation depends on speed and distance. As regards distance, we have to keep the distance very accurately between the ships so that when we start to move them we know there will be no collision. In order to insure that we may know at all times the distance from the ships near us we have two instruments [99] on the bridge, one a stadimeter, and the other a range finder, a short range finder which we use for measuring the distance very accurately. We do this constantly, and in doing it and in checking up constantly we finally acquire the habit of being able to look at a ship and are able to estimate within a very few yards whether it is within a thousand, fifteen hundred or two thousand yards. That is every day work on ships, and so we become very accustomed to estimating distance. The same thing relates to speed. Whenever our ships are operating together they always indicate by some little flag hoisted on the side of the bridge the speed the ship is making. If you look into the water and estimate the speed you can im-

(Testimony of Harris Laning.)

mediately verify it by looking at the flag, the speed flag, to see how much speed it is making. The result of having this constant information is such that you become so accustomed to estimating this particular speed that you get to do it very accurately.

Q. Admiral Laning, let us have again your first view of the Silver Palm. Now, you were standing on which side of the Chicago at the time you first viewed her? Will you point that out on the model of your ship?

A. I was standing right there on the flag bridge of the Chicago looking out this direction, when I heard, when this man beside me said "Steamer ahead". I turned my head and looked up to the bow—there is a jackstaff, which is not shown there, and on this side of the jackstaff about 15 or 20 degrees from the bow off in this direction I saw the Silver Palm.

The COURT: How far away did you estimate it was?

A. It was eight or nine hundred yards away. That position is a very simple one for us to estimate the distance, because you get in a habit of associating the point on the jackstaff where [100] it cuts the water line of the ship to show the distance away. The distance that the Silver Palm was from the Chicago at that time was eight or nine hundred yards.

(Testimony of Harris Laning.)

Miss PHILLIPS: Q. The jackstaff is right at the very bow of the ship?

A. It is on the extreme bow of the ship and is the pole on which the flag is raised.

The COURT: Q. The Union Jack?

A. Yes.

Miss PHILLIPS: Q. Going back to your first view of the Silver Palm, could you make out the outline of her hull or was she just an indistinct body, or how was it?

A. No, it was not indistinct at all. It came out of the fog just as clear-cut as could be. The bow of the ship was very distinct as it came out of the fog. The stern was still indistinct because it was still in the fog.

Q. Will you give us again the signals which you heard the Chicago blow?

A. I heard two blasts, and while—while I was sitting at the table. I heard another two blasts while I was looking out the door and at the water. I can not say positively how many more two blasts I heard. I heard at least one more, and maybe all of even three. But I estimated the time very carefully from the time I heard the first two-blast signal until I was on the deck and heard the one-blast signal that the ship was going ahead, and that time was four minutes.

Q. Did you hear any other signals from the Chicago?

(Testimony of Harris Laning.)

A. I heard one blast from the Chicago's whistle after I heard one blast from that—I don't know the name of that other steamer out there.

Q. Let us call it the Albion Star.

A. I heard the Albion Star blow a whistle and then after that the Chicago blew one blast on its whistle, and then the Chicago blew one [101] blast again on its whistle, just at the time this man that looked out, called steamer ahead, and I looked over and saw the Silver Palm.

Q. Did you hear the Chicago blow any more whistles after that?

A. Yes, I heard the backing signal very shortly after that, and the siren indicating the call for collision.

The COURT: Q. Do I understand from the time she was eight or nine hundred yards away until the collision or the impact, that it is your impression that she did not vary her way at all?

A. No. I think she varied her way, I think she slowed a little; she slowed from about 14 knots to 12 knots.

Q. What about her course, did she change it at all, or did she seem to keep a fixed steering?

A. She did not change to the right. She might have changed very slightly to the left.

Q. Your impression is there was practically no change in direction at all?

A. Practically no change in direction at all.

(Testimony of Harris Laning.)

Miss PHILLIPS: Q. Admiral Laning, did you hear any signals from the Silver Palm?

A. Not unless it was within five seconds of the time of collision. Just about the time of the impact I began to hear the whistle of the Silver Palm for the first time and it started blowing a series of toots on the whistle. That was the first I heard anything from the Silver Palm.

Q. Admiral Laning, at one time a few moments ago you spoke of your view of the Silver Palm being obstructed. Will you illustrate to the court what you mean by that? Will you point it out in the model?

A. I was standing right there on the bridge looking across the bridge in that direction. The Silver Palm was out here. As it finally got a position abaft this line of vision, the vision was shut off on account of this conning [102] tower right there.

Q. What do you mean by the conning tower?

A. That is the Captain's station in battle, it is an armoured protected position.

Q. Is the conning tower shown in this model?

A. Well, I do not know enough to say that that is the conning tower, but I think it is; yes; it would have to be abaft the turret, it is abaft of the turret.

Q. And when your view was obstructed you did what?

A. I walked across the flag bridge to the port side, to about there, and that is where I saw the collision occurred.

(Testimony of Harris Laning.)

Q. Admiral Laning, will you give us again your estimate of the Chicago's speed at the moment of impact, or I mean, just prior to the moment of impact?

A. As I went over to the port side of the Chicago the Silver Palm was between a hundred and two hundred yards away, and I looked at the water to see how fast the Chicago might be going through the water. It showed a very slight movement ahead through the water. I no longer looked at the water, I looked at the approaching ship, but of course the Chicago continued to back and it might have been stopped completely or even going astern at the time of impact which was some few seconds after I had looked at the water.

Q. Did you observe any change of course on the part of the Silver Palm?

A. None whatever to the right. Possibly there might have been a few degrees change to the left just before it struck, to its left, I mean.

Q. To her left?

A. To her left.

Q. I wish you would illustrate with the two ship models how the two ships reacted under the force of impact. Can you take the models and do it, or do you wish somebody to help you?

A. I think perhaps I can do it. What is it you want me to show? [103]

(Testimony of Harris Laning.)

Q. I want you to show how the two ships reacted under the impact?

A. The ships were in approximately that position.

Miss PHILLIPS: May the record show the witness is fixing an angle approximately of 40 degrees?

A. They were approximately in that position.

The COURT: If there is no objection as to showing that amount of degrees.

A. The impact caused the Chicago to heel to starboard and to turn violently to the right. This ship, of course, came right along with it and stayed in until it moved out a little bit and then it closed in again. There was the Chicago swinging violently to the right, the Albion Star which had been about seventy degrees on the bow of the Chicago now appeared to me to be over here, because, instead of it being 70 degrees on the bow I could look across the forward turret when the Silver Palm rested right here and see the Albion Star over there very clearly.

Miss PHILLIPS: Q. Would you place them again with relation to the jackstaff of the Chicago?

A. With relation to the jackstaff of the Chicago?

Q. Yes.

A. I was looking about in that angle and the ship appeared right in there.

Q. Now that would mean that the Chicago's swing was approximately how many degrees?

A. It was approximately 50 degrees.

Q. What did the Silver Palm do?

(Testimony of Harris Laning.)

A. Of course, from the force of the Silver Palm striking the Chicago until this ship appeared over here on this bearing, during all the time that the Chicago was going through this 50 degrees the Silver Palm was coming right along with it.

Q. Then what happened after that?

A. Then this ship seemed to [104] fall over that way a little more and the Silver Palm seemed to fall over that way and they finally wound up possibly 30 yards apart, or 50 yards apart, and about parallel to each other.

Q. Admiral Laning, did you have occasion to look at your watch or clock during any of the period that you were looking out?

A. No; just left my cabin at approximately the time I heard the Chicago sound two blasts, heard the Chicago sound two blasts for the second time, I noticed that the minute hand of my clock in the cabin was very close to 8 o'clock. It might have been just after the exact hour or just before it. That was the only time that I looked at a clock.

Q. If you were to assume that the Captain of the Silver Palm testified that he saw the Chicago at a distance of 2,500 yards a point and a half on his starboard bow, would that testimony affect your calculation of the distance involved?

A. Not at all.

Q. Could the collision have occurred as it did if this estimate of distance were correct?

(Testimony of Harris Laning.)

A. I do not believe it possible for the collision to have occurred from that distance without the captain of the *Silver Palm* using a good deal of ingenuity and skill to bring it about.

Q. You said you did not refer to a clock at any time during this period. Can you give us an estimate of the time that elapsed between your first sighting the *Silver Palm* and the moment of the collision?

A. My estimate that I made at the time was that it was at least ninety seconds, a minute and a half; it might have been as much as two minutes. I estimated that time by the things I did and by the way I stood there considering the situation, and these events could not all have happened in less than a minute and a half,—it [105] might have been two minutes.

Q. Admiral, what do you estimate the speed of the *Chicago* was relative to the speed of the *Albion Star*, this steamer that you sighted to your right or the starboard, between the time that you sighted her and the time you saw the *Silver Palm*? That is, in your judgment, in your estimation, was the *Chicago* going a greater or less speed than the *Albion Star*.

A. A less speed the *Chicago* was going, less speed at that time.

Miss PHILLIPS: That is all.

Cross-Examination.

Mr. LILLICK: Q. Admiral, how long was it that you watched the *Albion Star* on the port side,

(Testimony of Harris Laning.)

or on the starboard side, after she came into sight?

A. I would say about forty or fifty seconds.

Q. My recollection of your testimony is that you heard her whistle first?

A. Yes.

Q. And then she came quickly out of that fog bank?

A. Yes.

Q. And you saw her?

A. Yes.

Q. For how many seconds after that?

A. I think it was about forty or fifty seconds I stood there looking at her.

Q. And then the seaman at your side said "Steamer Ahead!"

A. Yes.

Q. So that it was 40 or 50 seconds from the time the Albion Star came out into the clear until you saw the Silver Palm?

A. Something about that time.

Q. At the time that you saw the Silver Palm, what would you say the relative positions of the Chicago, Albion Star and the Silver Palm were? Could you give me the angle between the Silver Palm and the Albion Star?

A. The Albion Star bore somewhere in the neighborhood of 70 degrees from the bow of the [106] Chicago. I did not measure it. It was forward of the beam. It was abaft of the bow bearing.

Q. And at that time the Silver Palm bore about 15 degrees or 20 degrees?

(Testimony of Harris Laning.)

A. On the port bow of the Chicago.

Q. And at that moment, Admiral, what would be your estimate of the distance between the Chicago and the Albion Star?

A. I estimated at that time that it was over a mile away.

Q. And what was the distance between the Chicago and the Silver Palm?

A. Eight or nine hundred yards.

Q. And what would you say the distance between the Albion Star and the Silver Palm was?

A. That would be a guess.

Q. I want your best estimate. They were both in sight?

A. I would estimate that to be somewhere around 2200 or 2300 yards.

Q. So that on an acute angle with a radius of 85 degrees the two vessels, the Albion Star and the Silver Palm were at the end of two sides of that angle that far apart?

A. I would say they were at least that far apart. That is based on rather a rough estimate of a little over a mile to the Albion Star, and, of course, from a rather rough estimate even of this angular distance between the two lines.

Q. Could you see the bow wave of the Albion Star during the 40 or 50 seconds that she was in sight?

A. I did not notice the bow wave.

Q. Was there any fixed object from which you could determine the speed of the Albion Star?

(Testimony of Harris Laning.)

A. No, except that it had the appearance of going faster than the Chicago. I have not any idea of the speed it was making.

Q. Admiral, is it not possible that during that 40 or 50 seconds you then saw it and then came to a conclusion as to the [107] relative speeds of the Chicago and the Albion Star, is it?

A. Not exactly as to their relative speed.

Q. Had you thought of it at all at that time or is it something that your mind has been directed to it since?

A. My mind has not been directed to it since. It was the reaction I had at that time.

Q. That is why I directed the question to you,— I wondered whether during that 40 or 50 seconds you then had come to the conclusion that the Albion Star was proceeding at a more rapid speed than the Chicago?

A. I came to that conclusion then.

Q. And that was after you had heard the first whistle from the Chicago one blast when you were leaving your stateroom?

A. What is the question?

Q. When you were leaving your cabin—

Miss PHILLIPS: Might I ask to have the question repeated?

Mr. LILLICK: I will withdraw the question. It was perhaps too complex.

Q. Where were you when you heard the first whistle from the Chicago of one blast that succeeded the preceding whistle of two blasts?

(Testimony of Harris Laning.)

A. I was on the starboard wing of the flag bridge of the Chicago.

Q. How long had you been there when that signal of one blast of the Chicago was given?

A. I had been there approximately a minute. I had time to size up the situation and look around.

Q. Then during that minute you were standing there you would say that the Chicago had not yet put on speed ahead?

A. No, I do not think she had.

Q. The two-blast signal meant that the Chicago's speed had been stopped and that she was under way but her engines were not moving; is that what it meant?

A. That is what it meant. [108]

Q. And it also meant that when that first signal of one blast was given she then was putting on her speed again?

Q. It is a fact, is it not, Admiral, that the Chicago was then commencing to swing to her port?

A. I noted that right after that first one-blast signal she was swinging to port.

Q. How did you notice that—from the way you were standing?

A. I could tell that by looking at the horizon past the jackstaff. I could also tell it by the change in the bearing of the Albion Star which was in plain sight.

Q. Did the Albion Star seem to be proceeding upon a steady course?

A. Yes, I think so.

(Testimony of Harris Laning.)

Q. Was the fog bank from which the Albion Star emerged a different fog bank from that from which you say the Silver Palm emerged?

A. Entirely.

Q. Were there at that time more than two banks of fog in one of which was the Albion Star and the other in which was the Silver Palm?

A. Away off in the distance, probably three or four miles I could see some fog patches; there were no fog patches though between that position of the Albion Star and the position of the Silver Palm. That area in between was clear and bright. You could see through that area for a distance of three or four miles.

Q. When you noted that the Chicago was blowing two blasts and went to your window you looked out on the port side of the Chicago, did you?

A. I have a glass door on that side of my cabin so that you can see the full length right at that door.

Q. And right out of that door you noted that it was foggy, did you not?

A. I noticed a thin fog over to port.

Q. How far away? [109]

A. Well, it seemed we were on the edge of a fog patch.

Q. Would you say that the Chicago just emerged herself from a fog bank?

A. That I could not say. That was the weather side, and that fog bank might have been coming down on the Chicago. I could not tell. I had not looked out before. I don't know how it was.

(Testimony of Harris Laning.)

Q. How far on your starboard side was the fog bank from which the Albion Star emerged? Extending aft? How far aft did the fog bank from which the Albion Star emerged extend aft?

A. I did not notice the aft side of it. I was not particularly concerned with it.

Q. You don't know whether there was fog there or not?

A. That, I don't know. I looked ahead.

Q. The Chicago had been running through fog had it not?

A. I had heard the fog whistle, but I had not looked out.

Q. It is a fact that the Chicago blew fog signals from the time she was ordered to proceed independently up to the time of the collision?

A. I did not note it. I heard the fog signals in that time, but I don't know whether they blew them all the time or not.

Q. She was towing what you call a towing spar during that time, was she not?

A. I don't know.

Q. When you left the bridge, as I understood you, at 7:15—was it 7:15?

A. Yes.

Q. When you left the bridge at 7:15 did she have her towing spar out?

A. I did not notice.

Q. You don't know?

A. I don't know.

(Testimony of Harris Laning.)

Q. She had been while in formation with the towing spar out, had she not?

A. Oh, yes.

Q. Will you tell us what a towing spar is?

A. A towing spar is [110] a wooden spar with a sort of little wedge effect at the forward end, which is towed at the end of a line at a certain distance you want the following ship to keep, and by her keeping close to the towing spar she can keep an exact distance from the ship ahead. That spar throws up a sort of spray so that it can be seen a great many times when the fog is so thick you can not see the ship ahead at all.

Q. While this towing spar was out what length of line was on the spar?

Miss PHILLIPS: Just a minute. If your Honor please, counsel is assuming something not in evidence. In other words, he said he did not know.

The COURT: I will sustain the objection.

Mr. LILLICK: Q. You had a towing spar out the last you knew of that spar on that morning, did you not?

A. I could not answer that positively. [111]

Q. On what length of line is the towing spar carried, or was it carried that morning?

A. I don't remember at what distance I had given them, but we usually carry the towing spar at the distance that we establish for the ships to maintain between each other.

Q. When you left scouting formation—is that the correct term?

A. No, we were in column formation.

(Testimony of Harris Laning.)

Q. When you left column formation around seven o'clock—or what time was it?

A. It was about 7:15 when the "Chicago" left, I released the "Chicago" about 7:15. I did not watch to see her leave the formation, I don't know what time she left it.

Q. So that you simply gave the order and she proceeded in to San Francisco?

A. She goes ahead and carries out the order on her own initiative.

Q. What is the weight of the "Chicago"?

A. She is one of what we call the 10,000-ton cruisers. That particular type of cruiser on what we call the treaty tonnage is approximately 9400 tons, but that is without fuel and water. What the weight of the ship was that day without those figures I don't know.

Q. Will you give me your best judgment with the fuel and the water she had in her that morning what her weight was?

A. I have not any idea.

Miss PHILLIPS: Just a moment: I will have a witness on the stand who will testify exactly what it is. We do not want to have this guess.

Mr. LILLICK: I will take your statement, Miss Phillips, if you can give it to me. Do you know now, or do you wish to put that in later?

Miss PHILLIPS: I will give it from memory. It was 12,041 tons, but that is my memory of what the witness will testify, but I will have a witness on the stand who can testify exactly [112] to that.

(Testimony of Harris Laning.)

Mr. LILLICK: Then if it be not corrected we will understand it was 12,041 tons.

Miss PHILLIPS: Yes.

Mr. LILLICK: Q. The hull of the "Chicago" is constructed of what you call plates in the Navy?

A. Steel plates.

Q. What is the thickness of the plates at the point where the "Silver Palm" struck?

A. I don't know. I am not familiar with all of the technical details of construction of the ship.

Q. That also, undoubtedly, we will be able to obtain from some of the other witnesses?

A. Oh, yes, you can get that from plenty of them.

Q. Do you remember whether when you looked out of the window when you heard the two blasts from the "Chicago" calling attention to the fact that something unusual was going on, you looked at the water where your vision carried you from the window, or whether it was down next to the ship?

A. I looked right over the side. The water was about 30 feet from my eyes, at an angle down probably of maybe 50 or 60 degrees.

Q. So you could look right down on it?

A. Yes.

Q. Would you say, Admiral, that the speed of the "Chicago" as it can be computed from the revolutions that were turned over by her engines, would be a speed that we could deem to be more accurate than your estimate from looking at the water?

A. I think my estimate looking at the water is pretty close to accurate. I cannot say how it would

(Testimony of Harris Laning.)

agree with the engine turns, because on decelerations and accelerations there is always a lag in the speed of the engine.

Q. Then you would be disposed to think that your observation of the water would be better to rely upon than what we could deduce from the revolutions?

A. In the case of decelerations and ac- [113]  
celerations, yes, I would take my estimate.

Q. Now, acceleration and deceleration means, as you have just testified, a definite and standard test used by the Navy on various occasions?

A. When we are in formation we have a doctrine about the rapidity with which you will change your revolutions to create changes in speed. That is necessary so that all the ships in a formation will change speed at the same rate, so there will be no collision. We have that doctrine which is, of course, for formation. I cannot conceive of those revolutions being used in an emergency. They are for formation work.

Q. Then if I attempted to compute the speed of the "Chicago" upon that morning by calculations from the records in the engine-room, I would not be able to arrive accurately at the speed of the vessel, would you say that?

A. At times when it was accelerated or decelerated the engine revolutions would not at that time indicate the speed of the ship through the water.

Q. We have been informed, Admiral, that the "Chicago," before she changed speed, was proceed-

(Testimony of Harris Laning.)

ing at 18 knots an hour. Now, up to that time, at least, we could rely upon a speed of 18 knots, could we not?

A. I should think so, yes.

Q. And it is your information, is it not, that she was proceeding at 18 knots that morning?

A. I don't know what speed she was proceeding at. When I turned her over she was making 12 knots, and from that time until I looked out at the water I don't know what speed the "Chicago" was making.

Q. I think you said you turned your control over to Captain Kays?

A. When I use the expression I released the ship, that means that I have passed the control over to the captain, as far as that ship is concerned.

Q. That was at 7:15 that morning, approximately?

A. At 7:15 or 7:16.

Q. As I understand you, when you were standing on the starboard side [114] of the flag bridge the "Chicago" apparently was swinging toward the left?

A. When I first went to the starboard side of the "Chicago's" flag bridge the ship was not swinging either way. It was after the first one blast of the whistle that I noticed her head was swinging to port. to the left.

Q. You were not in a position then, even with your observation of the horizon, to tell how far she swung over, were you?

(Testimony of Harris Laning.)

A. Oh, yes, I had this mark of the "Albion Star" out there.

Q. How many degrees would you say she had swung from the steady course upon which she was proceeding at the time to the time you saw the "Albion Star"?

A. About 20 degrees.

Q. About 20 degrees?

A. Yes.

Q. And when did she stop swinging toward the port on that 20 degree change in relation to your observation of the "Silver Palm"?

A. She was just stopping and steadying on whatever that new course was, just as we picked up the "Silver Palm." After the jackstaff of the "Chicago" swung almost imperceptibly to the left and steadied then it was not more than 2 degrees, more probably one degree, but she was steadied on that course just as we sighted the "Silver Palm."

Q. You are unable to tell me whether at that moment the "Silver Palm" came out of the fog bank ahead of you the "Chicago" might have been coming out of a fog bank behind her, because you don't know whether there was a fog bank behind her?

A. If there was any fog right there it was not between me and the "Silver Palm."

Q. What would be your description of the general condition that morning were you entering it in a log, as to the condition of the weather in its relation to fog?

(Testimony of Harris Laning.)

A. I would say "Weather clear except for fog patches."

Q. And under circumstances like that is it your understanding that a vessel has a right to proceed at a speed that the captain of [115] that vessel deems to be moderate?

A. I would not say that it would have to be what he might call a moderate speed, that he had to proceed at a speed that would be safe under the conditions existing.

Q. Then you distinguish between moderate speed and safe under the conditions existing?

A. I do in that particular situation of the weather that day, of the visibility that day.

Q. Upon your direct examination I gathered the impression that you are of the opinion that the "Silver Palm" did not change course out to starboard prior to the collision?

A. Yes, I am very sure of that.

Q. And yet you are of the opinion that she was going through the water first at fourteen knots an hour, and then up to the time of the collision around 11½, I think you said?

A. No, I think I said 12.

Q. So that if she had given a hard right rudder it would have affected her course, would it not, during that time?

A. Very decidedly.

Q. This is an assumption upon my part. If the "Silver Palm" just prior to the collision and during the time when from your first observation she

(Testimony of Harris Laning.)

was going at fourteen knots down to twelve, put on a hard right rudder is it not possible that if your course had been proceeding steadily to the left that it would have appeared to you that she was continuing on the same course? I just ask you if that is possible.

A. No, that would not have been possible, because I had both the horizon and the ship there, and if she had turned at all I could have seen it, if for no other reason than it would have brought her masts in line. Her masts were not in line when I saw her. If she had turned in to the starboard at all it would have brought her masts in line. They never came in line.

Q. You misunderstood my question, I think, and perhaps we are talking at cross purposes. I am not asking you what you, yourself, [116] observed, I am not asking you what you, yourself, saw. I am asking if between the time you observed her running at fourteen knots an hour and the time a minute and a half after that that she was running at twelve knots an hour, in your opinion she had put on a hard right, hard starboard, and changed her course to the starboard, if the "Chicago" during that time was proceeding to the left, isn't it possible that it would have appeared to you, because of your courses being to the left, that the "Silver Palm" was not changing her course: Is that possible?

A. No, I do not think that is possible. Anyhow, the "Chicago" was not going to the left then.

(Testimony of Harris Laning.)

Q. But that is part of my question that I asked you to omit, when you saw the "Silver Palm" 100 yards away and came to a collision when the "Chicago" was either dead in the water or then reversing, is that, in your opinion, the explanation of why the "Silver Palm" struck the "Chicago" 100 feet forward of where you had first figured she would strike?

A. I think the backing of the "Chicago" made the collision very considerably forward of where it would have otherwise been.

Q. So that if you be correct in your assumption on your part it is certain that the "Chicago" was going backward in the water and not ahead?

A. No, there is a relative movement in there. It is very difficult to explain. But there is a point in the water that is a collision point. The part of the ship that would be struck in the collision would depend on what time the ship got up to that collision point. Will you ask that question again?

Q. I am putting it in different language, I am asking you whether it is your explanation of the reason why the "Silver Palm" struck 100 feet forward of where you thought she was going to strike because the "Chicago" was backing in the water during the time you observed the "Silver Palm" when you came to the conclusion she was [117] going to strike the "Chicago" 100 feet aft of where you actually did strike her?

A. I couldn't say whether it was due to the "Chicago" actually having stern way or merely due to her losing headway.

(Testimony of Harris Laning.)

Q. In other words, you are not willing to state that the "Chicago" was actually dead in the water?

A. No, I do not know it from observation. I knew it was almost dead in the water, but whether it had gotten dead or was going astern at the instant of the collision I could not say.

Q. Almost is such a relative term, do you mean less than five knots an hour?

Q. In other words, it is not possible, in your opinion, that the "Chicago" was going through the water at five knots when the two came in contact?

A. No, I am quite sure of that.

Q. If she had been, is that not an explanation of how the "Silver Palm" finally got around into this position, by the two vessels going as indicated?

A. I would not try to express an opinion on that.

Q. It involves a great many different forces, involving action of the water, the speed at which two vessels come in contact, and the weight of the two vessels, among other things?

A. I presume all of those things would enter into it, but I am not enough of an expert in the resolution of forces to give you an analysis of that.

Q. How long is your estimate of the time between when you first left your cabin and the time that you arrived on the flag wing?

A. I should say somewhere between thirty seconds and a minute. I went up slowly, I did not run up.

Q. I would like to have your estimate of the actual time in minutes from the first signal of one blast that you heard after the two up to the impact.

(Testimony of Harris Laning.)

A. I think it was at least a minute and a [118] half, probably a little more.

Q. I think you must be in error about that. I am asking you for the time, your estimate of time from the first single blast—

A (Interrupting) Between the first blast?

Q. The first one blast—

A. The first one blast and the time of the collision was something over two minutes and thirty seconds, would be my estimate. How much more I am unable to say.

Q. You spoke about some tests that were to be conducted upon the "Chicago." Will you tell me something about those tests?

A. It is rather technical engineering with which I am not familiar but the Bureau of Steam Engineering had some tests known as boiler bake-out tests, and I don't know exactly just what that means, but they were trying something and in order to get it they had to generate a good bit of steam on the boilers, and in order to generate that amount of steam on the boilers and having it function they had to use a speed to up around, I suppose, from 15 to 18 knots to get the test they desired on the boilers.

Q. It is a fact, is it not, Admiral, that had it not been for those tests you would not that morning have been running at eighteen knots an hour?

Miss PHILLIPS: Just a moment: Counsel is trying to get the witness to say what he would have done had he been the captain of the ship.

(Testimony of Harris Laning.)

Mr. LILLICK: Not at all. I am asking if the speed at which the vessel would have been proceeding at sea had it not been for the fact that they were engaged in these boiler tests—

A. (Interrupting) We would have proceeded at 12 knots otherwise, because we have an order in these days of economy to steam not above 12 knots, and when the Bureau of Engineering ordered these tests it gave the authority to go above 12 knots. We would have been going 12 knots otherwise except by order. [119]

Q. And going at a greater speed than 12 knots on the "Chicago" means burning excess fuel, that is, in the eyes of the Department?

A. Yes, it takes more fuel to go at 18 than it does at 12.

Q. What is the speed of the "Chicago" at the maximum?

A. About 32½ knots.

Q. I notice in the log-book the word "Standard" frequently. The captain of the cruiser, himself, sets from time to time what the standard speed is, does he?

A. If the ships are in formation the standard speed at which they will proceed is set by the officer in command of the ships. If the ships are operated singly, of course, they are under the captain, who sets whatever he wants the standard speed.

Q. And that could either be 12, 18, 16, any speed which he desired and that would be the standard speed, and so entered in the log?

(Testimony of Harris Laning.)

A. He would enter it as to what his standard would be.

Mr. LILLICK: I think that is all.

Redirect Examination.

Miss PHILLIPS: Just a few more questions. You say you released the "Chicago" at 7:15?

A. Approximately 7:15.

Q. And you had directed the test of the "Chicago's" boilers to be made?

A. Directed what?

Q. The test of the "Chicago's" boilers to be made when she was released?

A. No. I did not direct that. We have a way in the Navy of telling a ship that it has a certain job to do, and then releasing it to do that job, and I had told them that that was the day that they could have for that boiler test, and I released them so that they could carry it out.

Q. That is what I am getting at here. At 7:15 you released the "Chicago" for that purpose?

A. Yes.

Q. What were the weather conditions at the time of releasing the "Chicago"?

A. The weather conditions looked pretty good at that [120] time. There had been fog, but it was breaking away. The sun was shining through, there were clear areas in which you could see several miles, and then there were fog patches.

Q. What was the visibility to starboard let us say at 7:15. directly to starboard?

(Testimony of Harris Laning.)

A. Well, I did not take any accurate note, but it was not low, not very low. Ahead was what I was more concerned with, and looking up that way I could see several miles.

Q. In the cross-examination of counsel I am not quite sure what relation the two-blast signal bore to the one-blast signal to which he directed your attention. After the "Chicago" gave a one-blast signal, after you were out on the flag bridge did she give any two-blast signal after that?

A. No. The next signal after the last one-blast signal was the three-blast, indicating it was backing.

Q. I just wanted to have the record clear on that. Admiral, you have given the terms "deceleration" and "acceleration" and "lag," spoke of the lag of the ship. What do you mean by the term lag of the ship?

A. Well, if you have a ship that stopped and the engines begin to go ahead, the engine will make more revolutions in order to start the ship than would be required if the ship had that speed. That is, if 80 revolutions were started when the ship was stopped it would not mean, if it took 10 revolutions per knot, that the ship would instantly be going eight knots. It would take a very appreciable time for the engines going at 80 revolutions to get the ship's speed up to eight knots. I spoke of that as a lag between the engine revolutions and the speed, and in the same way with a ship slowing down, you will have that same sort of condition existing.

(Testimony of Harris Laning.)

Q. That is, it takes time for the mass of the ship to be energized, you might say, by the revolutions that the engines are producing?

A. Exactly. [121]

Q. And the term "deceleration" which you have used, let us have a little more of what you mean by that, when you speak of the ship decelerating.

A. Suppose a ship were going at 12 knots and you stopped the engines, instantly that would not mean that the ship would stop; the engine revolution counter would be indicating zero turns on the revolutions, but the ship would still be going through the water, so that both in accelerating and decelerating your speeds the engine revolutions do not show the ship's speed through the water.

Q. In that last illustration you gave of a ship when you stopped the ship and her weight carries her through the water, she is decelerating then?

A. She is decelerating in speed.

Q. And when she is stopped and her engines are put ahead she is accelerating in speed?

A. Accelerating in speed.

Q. Admiral, counsel, in examining you, asked you the question if the "Silver Palm" had prior to the collision, in fact, put the ship on a right rudder, he asked what your explanation would have been—let me withdraw that, I am a little confused. He asked you the question how would you explain the fact that the "Silver Palm" struck the "Chi-

(Testimony of Harris Laning.)

cago" at a point ahead of where you expected it. Let us have again what is a possible explanation of that?

A. Well, the possible explanation was that the "Chicago" did not advance as far ahead as I thought it might before it began backing.

Q. Is there any other explanation of why the "Silver Palm", instead of striking the "Chicago," we will say, amidships, struck her in fact on the bow, 68 or 70 feet from the bow?

A. Because the "Chicago" had not gone as far ahead as it otherwise would have gone; if the "Chicago" had gone farther ahead the "Silver Palm" would have struck further aft.

Q. Did you observe any apparent change of the course of the "Silver [122] Palm"?

A. There was an apparent slight change to left, at least when I came across the bridge, the ship looked a little bit more turned to the left than when I had seen it before, but I was not able to tell whether it was through deceleration of speed of the "Chicago" or the backing of the "Chicago." It just looked different.

Q. If the "Silver Palm" in fact had made a turn to the left would that account for the collision in fact being farther forward than you expected?

A. Oh, yes, it would account for it if it had done that, but I don't know whether it did, or not.

Q. Admiral Laning, suppose the collision had occurred on the "Chicago" farther aft than the

(Testimony of Harris Laning.)

point that it did occur, can you state, in your opinion, what degree of damage the "Chicago" would have suffered?

A. I think the damage would have been far greater, if it had struck in the fire-room, or the engine-room, or further aft in those parts of the ship where the men were, and it was breakfast time, about breakfast, there might have been much greater damage to the ship and much greater loss of life. It might have been a much greater catastrophe.

Miss PHILLIPS: That is all.

Mr. LILLICK: No further questions.

The COURT: We will take a recess now for not less than five minutes.

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(After recess:) [123]

HERBERT EMORY KAYS,

called for the United States; sworn.

Miss PHILLIPS: Q. Will you please give us your full name?

A. Herbert Emory Kays.

Q. What is your business?

A. Captain in the United States Navy.

Q. How long have you been in the Navy, Captain?

A. 32½ years, about.

Q. How long in your present rank?

(Testimony of Herbert Emory Kays.)

A. Since March, 1929, four years.

Q. Are you a graduate of Annapolis?

A. I am.

Q. Will you just state briefly what experience in commanding ships you have had?

A. I had command of a destroyer for about two years, a light mine layer for about twenty months, and the "Chicago" for one year at this time.

Q. When did you assume command of the "Chicago"?

A. March 25, 1933.

Q. Are you in command of her now?

A. I am.

Q. Will you state very briefly to the Court the kind of maneuvers and the kind of situations in which you have engaged with the "Chicago" or seen her handled?

A. We have engaged in routine maneuvers with the United States Fleet, battle exercises of various kinds, and cruised to Puget Sound ports, both in company with other ships and alone, during the last summer, and routine exercise in the vicinity of the Southern California coast during the fall.

Q. Were you in command of the "Chicago" on the morning she was in collision with the "Silver Palm"?

A. I was.

Q. Did you see the collision?

A. I did.

(Testimony of Herbert Emory Kays.)

Q. Where were you at the time of the collision?

A. I was on the port side of the navigating bridge.

Q. Will you point out in the model of the "Chicago", Exhibit 1, the position of the navigating bridge?

A. This represents the navigating bridge, here.

Q. Will you describe the weather conditions that morning, let us [124] say between the hours of seven and eight?

A. At seven o'clock the weather was clearing, it had been foggy during the night, but it cleared so that we had at times a visibility to the horizon between seven and eight.

Q. What would you say about the wind and sea?

A. There was a force of about 3 from, I believe, the north, northwest.

Q. By "Force 3," are you referring to the Beaufort Scale?

A. The Beaufort Scale.

Q. That is about how many knots?

A. Somewhere around ten knots.

Q. Were there any white caps?

A. There were no white caps.

Q. Who was directing the navigation of the ship?

A. Lieutenant Commander L. R. Gray.

Q. What position did he occupy on the ship?

A. Navigator.

(Testimony of Herbert Emory Kays.)

Q. Who was giving the orders to the engine and to the helm?

A. The officer of the deck—I was giving the orders, but they were executed by the officer of the deck.

Q. Who was that officer?

A. Lieut. Minter.

Q. Let us have the situation at eight o'clock, were there any lookouts on duty at that time?

A. Yes.

Q. Where were they stationed?

A. There was a lookout aloft on the foremast, and located on each wing of the navigating bridge; those were enlisted men; an officer lookout on the extreme bow of the ship.

Q. Point out the position on the foremast that you say the lookout was stationed.

A. Right in here.

Q. And the lookouts on the port and starboard wings were where?

A. They were out here.

Q. And the position of the bow lookout?

A. Right up here.

Q. Right up in the bow of the ship?

A. The extreme bow of the ship.

Q. Where was the "Chicago" bound, to what port?

A. San Francisco.

Q. Had she been in formation?

(Testimony of Herbert Emory Kays.)

A. She had been in formation up until about 7:26 a. m. [125]

Q. What happened then?

A. We had been given permission to leave the formation and proceed independently to San Francisco.

Q. Captain, will you begin now at the time your ship left formation and go ahead and tell us what happened between that time and let us say the time immediately following the collision; tell us all that you heard, and saw, and did?

A. From the time she left formation?

Q. Yes.

A. I obtained permission to proceed independently and gave orders to the officer of the deck to increase the speed gradually to a speed of 18 knots. I was on and off the bridge between then and eight o'clock; the weather was improving; it appeared to me we would have a good day. About eight o'clock I was standing in the chart house, which is just abaft the navigating pilot house, talking with the navigator, and the officer of the deck, or through a messenger, reported that a whistle could be heard, a whistle of another vessel could be heard. At that time there was some fog, and we were sounding our own fog whistle. I came out of the chart house to the pilot house, and to the best of my recollection I said, "Two-thirds speed," as I went through the door. Then I heard the whistle on our starboard bow, and immediately said "Stop." I went to the

(Testimony of Herbert Emory Kays.)

forward window of the pilot house and stood alongside of the navigator, where the windows were open and I could see and hear, and we drifted along for some time with the engines stopped, and then I saw this vessel on the starboard bow some 1000 or 1200 yards distant; we were on her port quarter, she was standing somewhat across our bow.

The COURT: Might I interrupt here. Let me ask you at what time in the morning was the command placed on you by the Admiral, what hour in the morning?

A. 7:26.

Q. 7:26?

A. When we shoved off.

Q. And as soon as you took command you immediately gave the order [126] to accelerate your speed to 18 knots: is that correct?

A. Yes.

Q. How long was it at that time before you actually attained 18 knots?

A. I do not know that, exactly.

Q. At the time you gave two-thirds speed you had accomplished that?

A. At that time we had been making 18 knots speed.

Q. What time in the morning was it you gave two-thirds speed?

A. Just about eight o'clock.

(Testimony of Herbert Emory Kays.)

Q. And just so that I can realize the situation, at what hour do you fix the collision between the two ships, when the impact came?

A. About 8:07.

Q. Now you can go on. You might read the Captain his answer up to the time I interrupted.

(The record was here read by the reporter.)

A. (Continuing) She appeared to be a merchant vessel making rather slow speed. We did not appear to be gaining on her. I watched her for a short time and decided that we could go ahead as we could easily clear her, and I could see well ahead a little on the port bow, a mile at least. I should say. I estimated she was standing across our bow about 16 degrees, therefore I directed to come left 20 degrees on the course and told the officer of the deck to ring two-thirds speed. A little after that I told the officer of the deck to ring standard speed. Shortly after that order there was reported to me a ship on the port bow, which I saw about the same time. I first saw a large bow wave, and then the hull of the ship, the bow of the ship standing directly toward the bridge of the "Chicago" between 700 and 800 yards away. I don't know then whether we had come to the new course, which was 330 degrees, or not, or were still swinging, as I was standing forward of the compass and forward of the wheel, but my impression was to continue our swing to present our bow to her, so that my first order was "Left rudder." Shortly after that I [127] could see that the vessel coming on was presenting more of her

(Testimony of Herbert Emory Kays.)

starboard side to me, I could see down her starboard side.

Q. When you say "Left rudder," that means you are throwing the vessel or the warship to the left or to the right?

A. To the left.

Q. In other words, when you say "Left rudder," you mean you are turning the bow to the left?

A. Yes.

Q. Or to the port?

A. Yes. That indicated that she was turning to her left or trying to come across our bow. I immediately saw that a collision was imminent unless she did something different. I then ordered "Full right rudder" and backed full speed, to allow her to get across our bow, and cause the bow to swing away from her. I could see at that time that a collision was practically inevitable and that the other vessel could not clear us. We went to collision quarters, sounded our siren, sounded three blasts, and backed the engine, and then I went out to the port side of the bridge and stood there as the vessel approached us. The vessel, as she approached appeared to me to swing more to her left. When I first saw her she was at about 20 degrees on our port bow. When she struck us she was probably 100 feet from where I was, and at an angle of around 40 degrees. I could not tell whether we had swung any through our right rudder at that time. It appeared to me that at that time we were not going ahead, we were

(Testimony of Herbert Emory Kays.)

nearly stopped. I had felt the ship vibrating heavily as we backed down. The vessel, which I found out afterwards was the "Silver Palm", recoiled as she struck, the "Chicago" heeled heavily to starboard, and I got the mental impression that she was swinging to the right. The "Chicago" as she came back rolled back to port, nearly touched the "Silver Palm" again, and I think it was about the time she struck that I ordered one-third slow engine, and then I continued to back so [128] that she would back away from her, and we pulled away a short distance and then stopped, the "Silver Palm" lying then more or less parallel to us some distance away.

Miss PHILLIPS: Q. Captain, coming back a little more in detail on these occurrences, you spoke about this vessel you sighted on your starboard. Let us call that vessel that "Albion Star." What was her bearing with respect to your ship?

A. I should say about 35 degrees on our starboard bow.

Q. When you first sighted her?

A. Yes.

Q. What would you say her course was relative to your course?

A. We were on a course of 350, and I should say her course was 15 degrees to the left of it.

Q. Are you giving that in degrees true?

A. Yes.

(Testimony of Herbert Emory Kays.)

Q. If the "Chicago" was on the course 350 degrees true, then that would place the "Albion Star" on a course of what?

A. 335.

Q. 335 true?

A. Yes.

Q. Now, when you gave this order to the helmsman just give again what that helm order was you gave to the helmsman.

A. "Come left 20 degrees"; that meant to change the course to the left 120 degrees. I gave the order to the officer of the deck.

Q. That would bring the "Chicago's" course to what?

A. 330.

Q. 330 degrees true?

A. True.

Q. Had the "Chicago" steadied or had she reached this course when you sighted the "Silver Palm"?

A. I could not tell you about that, because I was forward of the wheel and did not watch him steady on the course, my impression was he slowed down and was proceeding to the course.

Q. Was it your impression that the "Chicago" had reached 330 or not reached it?

A. My impression was she had almost reached it.

Q. When you sighted the "Silver Palm," going to the first sighting of the "Silver Palm," you

(Testimony of Herbert Emory Kays.)

placed her at what distance, how many yards when you first sighted her? [129]

A. Between 700 and 800 yards.

Q. What was her bearing with respect to your ship?

A. About 20 degrees on our port bow.

Q. Do you remember noticing the masts of the "Silver Palm"?

A. No, I do not remember directly noticing the masts. I noticed the bow wave and shape of her bow.

Q. What impression did you receive of the "Silver Palm's" speed?

A. She was making a very large bow wave, and I reckoned her as having quite a bluff bow.

Q. What do you mean by a "bluff bow"?

A. A broad bow, not a sharp bow.

Q. Looking at this model of the "Chicago", Exhibit 1, do you call this a bluff bow or a sharp bow?

A. That is a very sharp bow.

Q. Can you indicate on this model the extent to which you would round out the bow to mean what you would call a bluff bow?

A. It would be hard to indicate under water. I could indicate it on the forecastle, it would be something like that.

Q. More of an oval shape?

A. Yes.

Q. Instead of a sharp pointed bow, do I understand you?

(Testimony of Herbert Emory Kays.)

A. Yes.

Q. Captain Kays, let us go back to your orders to the helmsman when you sighted the "Silver Palm." Will you give us again the orders in just the way you gave them, and give us an estimate of the time that elapsed between orders?

A. My first order was "Left rudder," I cannot tell the time between that and the next order; it was a very short interval, probably less than half a minute, that I said "Full right rudder."

The COURT: Q. When you said "Left rudder" did that mean a full left?

A. I don't remember whether I said "Full left" or not. If I said simply "Left rudder" they would not go full.

Q. What would they do under the circumstances if you simply said "Left rudder"?

A. He would come to 15 or 20 degrees on left [130] rudder, and if I had said "Full," he would have come to 30 or 35 degrees.

Miss PHILLIPS: Q: Had the "Chicago" had time to swing to the left rudder before you countermanded the order and ordered right rudder?

A. No, I am sure she would not have.

Q. Is there any instrument or means on the bridge of knowing what revolutions the engines are going at any given moment? Is there any engine-room indicator on the bridge?

A. Yes, we have an engine-room indicator on the bridge.

(Testimony of Herbert Emory Kays.)

Q. Do you remember looking at the engine-room indicator at any time?

A. No, I do not.

Q. You do not?

A. No, I do not.

Q. At the time the "Chicago" sighted the "Silver Palm" have you any recollection of looking at the engine-room indicator?

A. I am sure that I did not look at the indicator.

Q. Can you estimate the speed of the "Chicago" at the time you sighted the "Silver Palm"?

A. I have estimated it around ten knots.

Q. You do not remember looking at the engine-room indicator. Have you any recollection of looking over the side of the ship?

A. Only as I looked at the other ship, looked at the water between myself and the other ship.

Q. You did not deliberately step to the side and look over the side of the ship?

A. No, you could not from where I was standing.

Q. When you ordered "Right rudder," was that a full right rudder or a partial right rudder you ordered?

A. Full right rudder.

Q. How many degree did this mean?

A. 35 degrees.

Q. When did you order the engines astern, the "Chicago's" engines astern?

A. I gave the two orders as near simultaneously as I could.

(Testimony of Herbert Emory Kays.)

Q. Which was the first in point of time?

A. I think I gave the order to the engines first, but I am not absolutely sure. [131]

Q. Can you give us an idea of the number of seconds elapsing between the order to the engines and the order to the helm?

A. Not over two or three seconds.

Q. Between the time that you ordered full speed astern and the collision was the "Chicago's" speed reduced any?

A. Oh, yes, it was practically stopped at the time of the collision.

Q. How do you estimate that her speed was practically stopped, what makes you say that?

A. I could only estimate it by my relative bearing of the "Silver Palm," because I was looking at her and could tell her speed in relation to her, she appearing to swing toward her left and gaining distance toward our bow, which I ascribed then to the fact that she was swinging to some extent toward her left, but as I stood on the port side of the bridge and watched her approach I could tell from her relative position then we were almost stopped.

Q. What made you think she was swinging to the left?

A. The only reason I had to think it was I could see more of her starboard side.

Q. I wonder if you could illustrate with the model again—can you put the model down in a position, using this Exhibit 1 and this other ship

(Testimony of Herbert Emory Kays.)

model which we have been using, and tell us what you mean that she swung to the left? Do you need somebody to help you on this?

A. If they put it on the table I can tell it better.

Q. We will have somebody else hold this so that you can illustrate what you mean.

A. If you put it up here, I could see down the starboard side.

Q. When you first sighted her could you see her port side?

A. My impression then was she was head on to us.

Q. That is, you could see both sides? You mean that?

A. I could not see either side, I saw her bow. [132]

Q. You mean that you could see the stem and both bows equally?

A. Yes.

Q. Is that what you mean?

A. Yes.

Q. Without seeing either side, is that what you mean?

A. I would be looking straight down at either side, the side was not open to me.

The COURT: Straight ahead?

A. Yes.

Miss PHILLIPS: Q. You mean the course of the ship would be such that you could only see the

(Testimony of Herbert Emory Kays.)

stem and both sides of the stem: Is that what you mean?

A. Yes.

Q. Do not let me put words in your mouth if you do not mean them. As the "Silver Palm" approached, what was it you could see?

A. She appeared to be turning to her port so that I could see down her starboard side clear aft.

The COURT: Could you tell in degrees what she swung?

A. I estimate that she struck us at an angle of about 40 degrees, which would make her have swung around 20 degrees.

Q. You think she swung around 20 degrees to port?

A. Yes, that is my estimate.

Miss PHILLIPS: Q. Had the "Chicago" made any change of course, as far as you could see, under this right rudder of yours?

A. I was forward of the compass and I do not remember noticing any change of course.

Q. You do not recall observing the compass. How about your own feeling of whether your ship was swinging or not?

A. I did not feel that.

Q. You did not feel it or do not remember it, which is it?

A. I do not remember it.

Q. You do not remember it?

A. No.

(Testimony of Herbert Emory Kays.)

Q. You say the angle of impact was about 40 degrees. I wish you would illustrate with the model there the way the two ships reacted [133] under the force of the blow. Take first the "Chicago," what did she do?

A. The "Chicago" heeled over to starboard, like this, and then she came back, and my impression was that they were swinging around like this.

Q. That is, the two ships swung bows together?

A. Yes, the bows almost touched for a little while and then we backed off and the ships pulled apart, that is, they were lying parallel for a couple of minutes and then parted.

Q. Do you know how much the "Chicago" swung by this impact, how much she actually swung from the force of the blow?

A. I don't know. I know when we went ahead a little later our dead reckoning tracers first started out in an easterly direction, and made a line in an easterly direction, showing that we were heading about east then.

Q. Captain, was there any loss of life on board the "Chicago"?

A. Yes, three officers killed.

Q. Can you name them?

A. First there was Lieut. Chappelle, United States Marine Corps, Lieut. Junior Grade—

Q. Was it MacFarlane?

A. MacFarlane, United States Navy, and Chief Pay Clerk Troy.

(Testimony of Herbert Emory Kays.)

Q. They were killed?

A. They were killed.

Q. Were there any other persons seriously injured?

A. A machinist was seriously injured, who lost part of his right arm.

Q. Was this man named Oehlers?

A. Yes.

Q. Do you recall that anybody else suffered personal injuries?

A. Electrician Giard was badly shaken up.

Q. What was done following the collision?

A. We sent a message to the "Silver Palm" asking if she needed any assistance. We were at collision quarters at the time, all hands at their stations, and we laid there sometime surveying damage. After, some few minutes later, we started ahead slow. Other vessels of our force came up astern; I stopped and took a medical officer on board [134] from the "Chester" and then we squared away on our course to San Francisco.

Q. Captain Kays, what kind of a fog whistle does the "Chicago" carry?

A. She has a steam whistle.

Q. Whereabouts is it located?

A. It is located on the forward side of the foremast.

Q. Was it sounded that morning?

A. It was.

Q. Do you remember how often it was sounded?

A. It was being sounded every minute.

(Testimony of Herbert Emory Kays.)

Q. How was the minute timed?

A. A man had a stop watch and timed it.

Q. Whereabouts was this man?

A. He was stationed on the starboard side of the pilot house, just on the starboard side of the wheel.

Q. What was the efficiency of this whistle?

A. It is very good penetrating whistle.

Q. How long a blast was he giving on it?

A. He was using a six-second blast, a four to six seconds blast, I believe.

B. Blowing every minute, you mean?

A. Yes, once a minute.

Q. Captain Kays, did you have any compass deviations or errors following the collision in the "Chicago's" compasses?

A. Yes, when we got ready to get under way they found that both gyros were apparently out. We have two gyros, one forward and one aft, and we had two repeaters on the bridge, one that is connected up aft and one forward, and they were nowhere near right, so we started out first steering by the magnetic compass, which was not affected, as far as we could see.

Q. What did you ascribe the condition of the gyro compass to?

A. To the shock of the collision.

Q. When did you leave San Pedro, Captain Kays?

A. We left San Pedro about nine o'clock the previous morning. [135]

(Testimony of Herbert Emory Kays.)

Q. During the twenty-four hours preceding the collision, did you have any occasion to observe the compasses?

A. In getting under way out of San Pedro the navigator compared his compasses with known bearings ashore and ranges—a routine matter—to establish the compasses are correct.

Q. Was any report given to you that the compasses were out?

A. The gyros were not out, they were reading correct.

Q. During the twenty-four hours leaving San Pedro to the time of the collision were you operating in conjunction with any other ship or ships?

A. We were operating with three other cruisers.

Q. With three other cruisers?

A. In formation.

Q. What did you mean by that, operating in formation?

A. They were steaming in column, and we were leading the column and setting the course.

Q. Have any reason to think that the compasses of the "Chicago" were incorrect?

No, I have every reason to believe that they were correct. The courses we steered coming up the coast that night were set from our compasses, and if they had been wrong we would have been quickly apprised of that fact by some other ship.

Q. That is, the three cruisers that followed you?

A. Yes.

(Testimony of Herbert Emory Kays.)

Q. And were operating with you?

A. Yes.

Q. What checks were made on the compasses for accuracy?

A. We have a routine check between the magnetic and gyro compasses every fifteen minutes. Of course, the two repeaters connected to the two main gyros are right alongside of each other, and they are constantly watched, and every fifteen minutes the quartermaster goes up to the standard compass and they read that and the steering compass along with the gyros and put it down.

Q. Captain Kays, was this routine followed in your course up the coast leaving San Pedro?

A. Yes, it was.

Q. Was there any report made to you that would indicate the "Chicago's" compasses were in any degree incorrect?

A. No. [136]

Q. You said that after sighting the "Silver Palm" you changed to a left rudder, and then came to the right rudder. Would the use of your right rudder have any effect at all in slowing the speed?

A. It would have a material effect in slowing down the speed.

Q. Even though your engines were backing?

A. With the ship moving the rudder had a braking effect, especially full rudder.

Q. You said when you sighted the "Albion Star" you changed your course from 350 degrees true to

(Testimony of Herbert Emory Kays.)

330 degrees true. What was your purpose in making that change of course?

A. To go by her and leave plenty of room; I came five degrees further than the course I thought she was on.

Q. In other words, were you paralleling her course?

A. Yes, and a little more.

Q. Would the use of that rudder in changing the course have any braking effect?

A. Oh, yes; that was not a full rudder change, but it had an effect.

Q. What degree of rudder normally was used in making a change of course from 350 to 330 degrees?

A. Unless otherwise ordered, the steersman would use 15 degrees.

Q. This would not have a braking effect equal to a full rudder?

A. No.

Q. Would it have any braking effect at all?

A. Oh, yes, any rudder angle except a very small rudder angle will affect the ship in speed.

Q. Let us go back to your orders when you first sighted the "Silver Palm." Do you recall now whether you said "Left rudder" or "Left full rudder"?

A. To the best of my recollection I said "Left rudder," but I am not absolutely sure.

Q. When you ordered a right rudder, was it right full rudder, or simply right rudder?

A. Full right rudder. [137]

(Testimony of Herbert Emory Kays.)

Q. When you gave the order "Full astern," will you tell me how that order to the engine-room was given to the engine-room?

A. They worked the engine-room annunciator twice; they put it back to full speed astern twice.

Q. What did it indicate when the engine-room indicator was rung twice astern?

A. That indicates an emergency.

Q. Is that a signal that is so understood on your ship, or is there any rule about that?

A. That is the custom in the service, and was understood in my ship.

Q. That ringing it twice indicates an emergency?

A. Yes.

Q. Was the interval between this order of left rudder and right full rudder long enough to have any apparent effect on your vessel's course?

A. I do not believe it had any effect on it, but there was no effect that I could tell from standing and watching it.

Q. Were you watching the compass at that time?

A. No, I was watching the "Silver Palm."

The COURT: What speed do you think she was making then?

A. About ten knots.

Miss PHILLIPS: I think that is all.

Mr. LILLICK: I feel quite certain if I go ahead with the cross-examination we will be here until five o'clock.

(Testimony of Herbert Emory Kays.)

The COURT: I think we have had a long enough session this afternoon. We will take an adjournment now until tomorrow morning at ten o'clock.

(An adjournment was here taken until tomorrow, Wednesday, March 14, 1934, at ten o'clock a. m.)

Filed June 19, 1934. [138]

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Wednesday, March 14, 1934.

HERBERT EMORY KAYS, Recalled

Direct Examination Resumed.

Miss PHILLIPS: There are one or two questions that I would like to ask. I had finished my direct examination, but there are one or two points I want to ask about.

Q. Captain Kays, do you recall whether the Chicago was using a towing spar the morning of the collision?

A. The Chicago had been using a towing spar when in formation during the night.

Q. Do you remember what the situation was at the time of the collision, or around 8 o'clock or anywhere around about that time?

A. To the best of my recollection we took the towing spar in when we left the formation around 7:26 a.m. I know we put it out after the collision.

Q. What time did you put it out again?

A. Between nine and ten o'clock in the morning, after the collision, when we joined up with the other ships.

Q. Captain Kays, what is the pivoting point of the Chicago, and where is it?

(Testimony of Herbert Emory Kays.)

A. The pivoting point is the point on which the ship revolves, turns, when it changes course. It is about forward of the smokestack, a little aft of the bridge.

Q. I wonder if you can take the model and show where the pivoting point is?

A. About this point.

Q. Just aft the bridge, did you say?

A. Yes.

Q. I think it might be useful if you would explain a little more in detail to the court what you mean by the point at which the ship turns under a change of course.

A. When the rudder is put over, the first motion of the ship is, for instance if we give her a right rudder, the first motion of the ship is a bodily translation to the left, and then the head of the ship turns to the right, [139] and she moves around the course. The point at which she turns about is the pivoting point.

Q. Captain, yesterday afternoon I asked you about the orders that you gave to the helmsman when you recognized the course of the Silver Palm, and you said your order you gave was a left rudder order. You said you did not remember whether it was a full left rudder or simply a left rudder. Have you refreshed your recollection on that?

A. Yes. I remember that I gave a full left rudder.

Q. What did you refresh your recollection with, might I ask?

(Testimony of Herbert Emory Kays.)

A. By referring to the record of the court of inquiry held in this case.

Q. When was the court of inquiry held?

A. It was held, it started three or four days after the collision.

Q. This was an inquiry held by the Navy Department, was it?

A. Yes.

Q. Did you testify before that court of inquiry?

A. Yes.

Q. And the events were fresher in your mind then, were they?

A. At that time they were.

Miss PHILLIPS: You may cross examine.

#### Cross Examination

Mr. LILLICK: Q. Captain Kays, I may be in error, but having read over your testimony before the court of inquiry, I have been unable to find any statement in your testimony with the full left rudder. Am I to understand this morning that in refreshing your recollection you refreshed it by reading only your own testimony?

A. No, I read the testimony of other witnesses also.

Q. I am right, am I not, in the statement that your own testimony before the naval court had no statement in it by you that you put on a full left rudder?

A. I believe I did not state.

Q. And there is no statement in your testimony?

A. I think not.

(Testimony of Herbert Emory Kays.)

Q. With respect to that?

A. I think not.

Q. When you say, captain, that you left the other units—Perhaps I [140] am not using the language that you would use, I am unacquainted with your own naval expressions—of the formation, you were in column formation and at the head of the column?

A. Yes.

Q. At that time the vessels were steaming at 12 knots, were they not?

A. Yes.

Q. And in leaving the formation I understand also, and correct me if I am not right, that the tables of acceleration being used by the Chicago that morning as well as by the other units of the formation, provided for a speed in coming from stop to standard speed, that would require six minutes within which a vessel would arrive at standard speed. Am I right about that?

A. Depending on what the standard speed is.

Q. The standard you were steaming on while in formation was twelve knots?

A. Yes.

Q. Is, at twelve knots, using the standard of acceleration that you were using that morning, how long would it take to come to twelve knots from stop?

Miss PHILLIPS: I object to the question as unintelligible.

(Testimony of Herbert Emory Kays.)

Mr. LILLICK: I withdraw the question. If any of my questions are unintelligible to you, ask me to ask them over again.

Q. You were using a table of standard acceleration that morning, were you not?

A. Yes.

Q. Not only in formation but after having left formation?

A. Yes.

Q. Am I right in stating that once having adopted a table of standard acceleration it is continued in use until an emergency order is sent to the engine room, or until different orders are sent with respect to the table of acceleration?

A. Yes, unless otherwise ordered.

Q. And up to the time of your order of emergency full speed on the morning of the collision when you saw the Silver Palm, the standard table of acceleration that was in use while the Chicago was still [141] in formation, was in operation upon the "Chicago"?

A. They did not use that between 7:26 and 8; the order was to increase speed gradually, which would have been much slower than the standard acceleration.

Q. Then the single order, "Increase speed gradually", did you say?

A. Yes.

Q. "Increase speed gradually" did not mean a stoppage of the use of the table of acceleration except as to that one order?

(Testimony of Herbert Emory Kays.)

A. Yes, that is correct.

Q. After having increased the speed gradually, the standard table of acceleration was thereafter used on that morning?

A. Yes.

Q. And, until, as I understand it, the emergency full speed reverse, which at once cancelled the order to work under the standard table of acceleration?

A. Yes. Might I qualify that by saying that, under ordinary conditions, on a stop signal, when we are proceeding at standard speed, they do not decelerate according to the standard acceleration and deceleration table. They stop right away, they close the throttle.

Q. That is by custom or by general orders?

A. I do not believe there is any general order. That is the custom on my ship, when they get a stop signal they know we want to stop, so they will close it right away.

Q. Going back to the question of how long it would take to arrive at a speed of 18 knots from the standard table of acceleration that morning, your change of "increase speed gradually" would have affected that how much. I want to find out how long it took from 9:26. was it?

A. 7:26.

Q. I want to find out how long it was after 7:26, under the order "Gradually increase speed" it was until you arrived at a speed of 18 knots an hour. Can you give that?

(Testimony of Herbert Emory Kays.)

A. To the best of my recollection it was about 8 a.m., that is 34 minutes. [142]

Q. So that "Increase speed gradually" without any other order to the engine room on that morning would, in your opinion, have resulted in a speed of 18 knots only at 8 o'clock that morning?

A. Yes. The standard of acceleration was not paramount. They could increase their speed at any rate they desired which would be slower than standard acceleration.

Q. In reconstructing what occurred that morning, from your own recollection of it, would you say that your present estimate that the "Chicago" arrived at a speed of 18 knots not before 8 o'clock, but about 8 o'clock would be more to be relied upon than the records of your engine room?

A. The records of the engine room would be better than my observation of it.

Q. The engine room log would in fact give us the time at which the "Chicago" arrived at a speed of 18 knots?

A. Yes, they should show that more exactly than my observation.

Q. Bearing in mind that in your opinion the speed of 18 knots was only attained at about 8 o'clock, and the other units of the formation in which you were, you had left at 7:26 that morning, how far behind you would you say the first vessel in the succeeding formation was?

(Testimony of Herbert Emory Kays.)

A. I should say he was about three miles behind.

Q. May I compute that with you. The difference between twelve knots and eighteen knots is six. If at 7:26 the "Chicago" was proceeding at 18 knots an hour and not at 8 o'clock, the "Chicago", half an hour afterward—and we will use a half an hour—would,—If I am stating this correctly—have been one half of the six knots ahead of the first succeeding vessel, would it not?

A. Yes.

Q. Then is your computation not incorrect if you tell me that your present estimate would be that the first succeeding unit of the column was three miles behind you at 8 o'clock?

A. In an hour, if we were steaming 18, we would gain six knots on [143] them.

Q. And in a half hour?

A. In half an hour we would gain three knots.

Q. But I am using your own estimate that you did not attain the speed of 18 knots upon the "Chicago" until around 8 o'clock, and certainly the next succeeding vessel would be much nearer?

A. Yes. I would like to correct that. It would be nearer a mile and a half.

Q. Nearer a mile and a half?

A. Yes.

Q. So that when you came out of the pilot house, on learning that there was a steamer on your star-board bow and stopped the "Chicago" you had aft

(Testimony of Herbert Emory Kays.)

three cruisers steaming at twelve knots an hour coming up on you: That is right?

A. Yes, I believe they were making that speed.

Q. And on the same course?

A. No, they were not on the same course, as far as I know; after we shoved off we changed course.

Q. What course were you steering when you left formation at 7:26?

A. To the best of my recollection it was 324 true.

Q. 324?

A. That is the course the formation was on.

Q. You changed from 324, which would have curved you further out to sea?

A. Yes.

Q. To 350?

A. Yes.

Q. And you remained on 350 until the course made when you heard the whistle of the "Albion Star"?

A. When I saw the "Albion Star".

Q. When you saw her. What time did you leave San Pedro the morning before?

A. Nine o'clock in the morning.

Q. Do you remember what time you went on duty the morning before captain?

A. When I went on duty?

Q. Yes.

A. I am on duty all the time on my ship. I went on the bridge before 9 o'clock?

(Testimony of Herbert Emory Kays.)

Q. You went on the bridge before 9 o'clock?

A. Yes.

Q. And were you up before that time?

A. Yes. [144]

Q. Were you going out to conduct maneuvers or any tests other than these tests on your boilers?

A. We were proceeding in company with other ships to San Francisco for Navy Day.

Q. Any maneuvering to be done on the way up?

A. Yes, we did that day, that forenoon, we did some maneuvering with the other ships.

Q. The time occupied between 9 o'clock in the morning when you left San Pedro and up to the time that you squared away on your course of 324, I think you said was to some extent occupied in maneuvers?

A. Yes.

Q. How far out to sea did you go?

A. We went through Santa Barbara channel. The maneuvers I speak of were while we were in sight of Anacapa Island, as I remember, those maneuvers were in Santa Barbara channel.

Q. And then from Anacapa Island the formation went out in column to square away for San Francisco?

A. I believe we were in two columns part of the day, and the latter part of the day we formed up in one column.

Q. Do you remember how far up Anacapa you went?

A. No, we were about midway of the channel between Anacapa and the mainland.

(Testimony of Herbert Emory Kays.)

Q. Were you on the bridge, except for the time that you had your meals, from 9 o'clock of the morning before until the collision?

A. Practically all the time. I had my meals in the cabin just abaft the bridge.

Q. So that you were practically on the bridge from 9 o'clock the morning before, until 8 o'clock on the morning of the collision?

A. Yes.

Q. Without any sleep between?

A. I slept part of the time.

Q. You did sleep part of that time?

A. Yes.

Q. Was Lieutenant Minter the officer of the deck upon the occasion of the collision?

A. Yes. [145]

Q. While Lieutenant Minter was on the bridge and you and the navigating officer were in the pilot house, had Lieutenant Minter authority to maneuver the "Chicago" without conferring with you?

A. Yes, he could in an emergency and then report to me afterward.

Q. It is my recollection that the testimony shows that a report was made to you that a steamer's whistle had been heard off the starboard bow: Is that correct?

A. That a steamer's whistle had been heard. I do not remember whether they gave me the bearing of it or not.

Q. In any event, that report came back to you from the bridge, you being in the pilot house?

(Testimony of Herbert Emory Kays.)

A. Yes.

Q. How did they convey that to you, by a messenger?

A. I do not remember whether it was the officer of the deck or a messenger. I was only a few feet away.

Q. Did you hear at that time how many signals they had heard from the "Albion Star"?

A. By report, you mean?

Q. Yes.

A. I don't remember that.

Q. Do you remember other than that how many they had heard?

A. No, I do not.

Q. Did you ask Lieutenant Minter when he came on the bridge how many signals he had heard from this other vessel?

A. No, I don't remember asking him that.

Q. So that in fact, at that time, you did not know how many signals had been heard from the "Albion Star"?

A. I do not believe I did.

Q. She was not then in sight?

A. No.

Q. Did they tell you from what direction of bearing this whistle appeared to come?

A. I don't remember that they did, no.

Q. So that you came from the pilot house onto the bridge, only knowing that a whistle of another vessel had been heard?

A. That is to the best of my recollection, yes.

(Testimony of Herbert Emory Kays.)

Q. Did you then hear a whistle?

A. Yes, I heard a whistle soon [146] after I got out there.

Q. From what bearing did it come?

A. It was forward of the beam on the starboard bow.

Q. Did you say nothing to Lt. Minter about whether that was a whistle that had been reported to you?

A. I do not remember saying anything to him about it. I was engrossed with giving orders to the engine at that time.

Q. You just assumed that was the whistle they had heard before?

A. Yes.

Q. What order did you give to the engine room?

A. As I came out I said "Two thirds."

Q. How long after that was it before you gave the order "Stop"?

A. I stepped across the pilot house to the forward windows which were open and heard the whistle, and immediately said "Stop", as soon as I realized that the whistle was from forward. It was a short time.

Q. Yet, as I understand you, captain, being in the pilot house, hearing only that, or learning only that they had heard a whistle in the fog, without knowing from which direction it came, whether it was forward of your beam, either port or starboard, you rang your engines to two thirds: Is that correct?

(Testimony of Herbert Emory Kays.)

A. Yes.

Q. How long after you gave the order "Stop", when you yourself heard the whistle, was it until you saw the "Albion Star"?

A. Probably two minutes.

Q. And during that time how many whistles from the "Albion Star" did you hear?

A. I don't remember.

Q. How far away was she when she came in sight?

A. One thousand to 1200 yards, I should say.

Q. Did she come out of the fog suddenly, or did she gradually appear through the haze?

A. She appeared rather quickly. We were in a clear spot. [147]

Q. Was the wind blowing the fog to your starboard and aft?

A. Well, the wind was on the port bow, which would have been blowing the fog that way.

Q. The wind was blowing from the northwest about twelve miles an hour, the record shows, which would mean that the fog out of which the "Albion Star" came was possibly blowing in a direction off of your starboard quarter; is that right?

A. In a direction off the starboard quarter, yes.

Q. How long was it after you saw the "Albion Star" until you came to the conclusion which you gave us yesterday that she was on a course converging toward you?

A. I probably arrived at that conclusion in three or four seconds, very quickly. She appeared plainly.

(Testimony of Herbert Emory Kays.)

I could see her port quarter and could see she was standing across her bow.

Q. And up to the time you had a speed of 18 knots an hour to when you rang two thirds, had your vessel, the "Chicago" stopped for two minutes?

A. The engines had been stopped for about two minutes.

Q. How long was it between the two thirds order and the stop order?

A. A very few seconds; I could not remember exactly.

Q. You continued to watch the "Albion Star" did you not, after she came in sight, and you were coming to the conclusion as to the course upon which she was proceeding?

A. I watched her until I was satisfied that she was standing across our bow and that she was moving in about the same speed that we were, and decided that I could come left and clear, and I could see well ahead, so I decided to go ahead.

Q. By saying that she was apparently going at the same rate of speed you were, you do not mean she was going 18 knots an hour, do you?

A. No, she was going slow and we were going slow.

Q. After you had come to the conclusion that your courses were converging and that you would bear off from her, you also came to [148] the conclusion that you could put on standard speed again and go ahead of her, did you not?

(Testimony of Herbert Emory Kays.)

A. I came to the conclusion that it was safe, as far as she was concerned, to go ahead: out on my port bow I could probably see ahead a mile, and I decided to get by her as soon as possible.

Q. On the other side of that mile was the danger awaiting you from the "Silver Palm" as it turned out: That is true, is it not?

A. It might have been. The "Silver Palm" did not appear in the direction in which we were steering our course.

Q. There was a fog bank there was there not?

A. There was fog off to the left, as I remember, and there was fog right ahead, but the visibility was about a mile.

Q. The visibility being about a mile, at the end of that visibility was a fog bank, was there not?

A. Yes.

Q. And from that fog bank emerged the "Silver Palm": that is true, is it not?

A. She did not emerge from the end of that mile, she emerged further over to the left.

Q. But still in that fog bank?

A. I suppose it might have continued, she came from a fog bank.

Q. At that time, will you, in reconstructing it, tell me, while you were coming to the conclusion that you were going to pass the "Albion Star", you had not the danger of your following cruisers in your mind?

A. No, I had no fear of them.

Q. Never thought of that?

(Testimony of Herbert Emory Kays.)

A. No.

Q. Yet they were within a mile and a half of you and you had stopped for two minutes?

A. But they were on a different course than we were, as far as I know.

Q. It is my recollection that you said yesterday, or you testified yesterday, that the "Silver Palm" when you first saw her, was entirely in the clear. Am I right about that? In other words, [149] you saw the full vessel?

A. I saw her bow. I do not remember seeing her masts. I could plainly see her bow. The first thing I saw was her bow wave.

Q. Might I refresh your recollection, captain. The fog bank was a mile away, and when you first saw her she was 700 or 800 yards away, so she had been out of the fog bank at least half a mile when you saw her?

A. No, the fog bank she came out of was not a mile away.

Q. It was not?

A. No.

Q. How far away was the fog bank out of which she came?

A. It was 700 or 800 yards.

Q. So that when you changed your course from 350 that you were on, and put on standard speed again at 18 knots to get ahead of the "Albion Star", you did so with a fog bank on your port bow only seven or eight hundred yards away?

A. Yes.

Q. When you first saw the "Silver Palm" at

(Testimony of Herbert Emory Kays.)

700 or 800 yards away, you testified yesterday that you saw both sides of the "Silver Palm". Have you any recollection of her masts?

A. I have no clear recollection of seeing her masts.

Q. Is that perhaps, captain, because you have no recollection now of it, or you are unable to tell me whether you did see her masts then?

A. I remember that point at the time of the court of inquiry, and I could not remember then of noting her masts at that point.

Q. My recollection differs from yours, captain. Do I understand that at the court of inquiry you were unable to remember whether you saw her masts?

Miss PHILLIPS: Just a minute, I think counsel is misstating the witness' testimony.

Mr. LILLICK: That is the statement he has just made.

Miss PHILLIPS: I would like to have the witness' previous answer read. Counsel has misstated the effect of his answer. [150]

Mr. LILLICK: If such an error has been made, I will welcome the correction.

Miss PHILLIPS: The answer I have in mind was that he first saw the bow wave. May I have that question and answer read?

The COURT: Read the record.

(The record was here read by the reporter.)

Mr. PHILLIPS: Counsel is referring to a different point of time than that the witness has testified to.

(Testimony of Herbert Emory Kays.)

Mr. LILLICK: I have no intention of doing that.

Miss PHILLIPS: Let us have it cleared up.

Mr. LILLICK: I will attempt to clear it up. It is my understanding, and you correct me if I am wrong, that at the board of inquiry you did testify that you saw a mast and in almost a direct line. Am I wrong about that insofar as your memory goes?

A. I can not remember directly. I can remember seeing her masts as she approached. I remember testifying that the masts opened out as she approached.

Q. Captain, I am reading from page 134 of the testimony before the naval court of inquiry before which you were examined.

Miss PHILLIPS: About the first of November.

Mr. LILLICK: About the first of November Miss Phillips states, and where, having been examined by the Judge Advocate you were examined by the Court, and these questions were asked you and these answers given:

“Q. Were the masts of the ‘Silver Palm’ in line when you first sighted the ship?

A. That was my impression, that they were just about in line, yes, sir.

Q. Did the masts continue to be in line until she collided?

A. No, sir, the masts were open. I could see the starboard side of the ship. As she struck by No. 1 turret the ship was nowhere in line with the bridge at that time, as I could see all her starboard [151] side.”

(Testimony of Herbert Emory Kays.)

Do you remember that?

A. Yes.

Q. Was that true?

A. That was my answer.

Miss PHILLIPS: Might I ask counsel to read along on the next page?

Mr. LILLICK: I will be glad to.

Miss PHILLIPS: I would say let us read from that point on to the end of the witness' testimony on the next page.

Mr. LILLICK: Q. "Q. When asked about the speed of the "Silver Palm" you stated that she seemed to be going fast. That is a very relative term. Could you define what you mean by "fast"?

"A. I should say—My impression of her was that she was a very bluff-bowed ship and making a big bow wave. By that, I mean fast for a ship of that type, and my impression was around ten knots."

Now Miss Phillips, if you care to read the rest of this on redirect examination I will be glad to have you do it.

Miss PHILLIPS: I did not want counsel to just read a portion which gave an erroneous impression. He goes on to testify about the impression of the bow wave.

The COURT: Is it relative to the masts?

Mr. LILLICK: Miss Phillips may, if she wishes, read the balance of it on redirect examination.

Q. Captain, bearing in mind what I have just

(Testimony of Herbert Emory Kays.)

read to you, will you be good enough, without respect to courses, to place on that paper these models, call one of them the "Chicago" and the other the "Silver Palm" and then from your position on the "Chicago" place the "Silver Palm" as she appeared to you 700 or 800 yards away, when you first saw her?

A. Right on here?

Q. Yes, I would suggest that you take the models and then draw around the models and call one the "Chicago" and the other one the "Silver Palm."

A. Of course this is not to scale or [152] distance.

Q. Not to scale or distance, except when you are through I will put on there "Seven or eight hundred yards" between them, and I would like to have you place the "Silver Palm" in a position where her masts are about in a line as you saw them, and also on the bearing that she seemed to be from the "Chicago" at that time. Will you just write "Chicago" on one which you intend as the "Chicago" and "Silver Palm" on the other?

A. Yes.

Q. And at that time the distance between them was 700 or 800 yards?

A. The distance from the bridge.

The COURT: Draw a line there.

A. Yes.

Mr. LILLICK: We offer this in evidence as our next exhibit "Silver Line Ltd. Exhibit 1."

The COURT: It will be so received.

(Testimony of Herbert Emory Kays.)

(The document was marked "Silver Line Ltd. Exhibit 1.")

The COURT: As I understand you, captain, at that time, when the "Silver Palm" was 700 or 800 yards away from you on the bridge, the "Albion Star" was about a mile and a half away?

A. She was less than a mile and a half. I did not look at the "Albion Star" any more, but she was never that far away from us until she left us and went ahead.

Q. I am not trying to mislead you with respect to that distance, captain. How far is your present estimate that she was away from you when the "Silver Palm" was reported and you turned your eye from the "Albion Star" to the "Silver Palm"?

A. Probably 1000 yards.

Q. Probably 1000 yards?

A. Yes.

Q. Will you on this other sheet again draw the "Chicago" and "Silver Palm" bearing in mind that the "Silver Palm" was seven or eight hundred yards away from the bridge and the "Albion Star" the distance that you have just stated from you, and put the [153] relative positions as nearly as you can?

A. At what time?

Q. When you glanced from the "Albion Star" to the "Silver Palm" and you first saw her seven or eight hundred yards away.

A. I have no clear recollection of looking at both of them at the same time. I was looking at the

(Testimony of Herbert Emory Kays.)

“Albion Star” on the starboard bow, at least I had been looking at her, and when I started to pull ahead, I probably took my eye away from it, I could not give you the relative positions at the same time. I did not look at them both at the same time.

Q. It is my understanding of your testimony that you looked from the “Albion Star” toward which your attention was directed, to the “Silver Palm”, she having been reported—

Miss PHILLIPS: Just a moment. I think counsel is misstating the witness’ answer. The witness has just stated the direct contrary of what counsel stated.

Mr. LILLICK: Will you help me then, Miss Phillips?

Miss PHILLIPS: Let the witness’ answer be read back.

The COURT: Read the answer.

(The record was read by the reporter.)

Mr. LILLICK: Q. What I want you to do is, as best you can, reconstruct the situation as it then existed with you, having observed the “Albion Star” on your starboard bow, and glancing from her to your first observation of the “Silver Palm” and place on the paper as near as you can, the relative positions of the three vessels?

A. I do not believe I could do that. We had the “Albion Star” I should say, broad off our bow when I ordered the course changed to the left, and after that to the best of my recollection I kept a lookout ahead and not toward the “Albion Star”,

(Testimony of Herbert Emory Kays.)

and I have no clear recollection of what bearing she was on when I sighted the "Silver Palm. [154]

Q. What was the first order you gave to the helmsman when you changed your course from 350 degrees, after seeing the "Albion Star"?

A. I told the officer of the deck to come left 20 degrees.

Q. How long after you gave that order "Come left 20 degrees" was it until you saw the "Silver Palm"?

A. I should say less than half a minute, but I do not remember that.

Q. But during that half a minute were you still observing the "Albion Star"?

A. No, I believe, to the best of my recollection, when I said that "Come left" I looked ahead, I did not look at the "Albion Star." She would be well off on our starboard bow.

Q. When you looked ahead the "Silver Palm" was not yet in sight?

A. No, not when I first started to look ahead, she was not in sight.

Q. Will you, on this piece of paper, captain, draw the "Chicago" in the relative position which she occupied to the "Albion Star" the last time you saw the "Albion Star" before you saw the "Silver Palm"?

A. You want the last time I saw the "Albion Star"?

Q. The last time you saw the "Albion Star."

A. The last time I can definitely remember look-

(Testimony of Herbert Emory Kays.)

ing at the "Albion Star" was when I gave the order to come left.

Q. Will you be good enough to write "Chicago" and "Albion Star"?

A. Yes.

Q. The distance between you was what?

A. I estimated one thousand or twelve hundred yards.

Q. Will you put that on the paper too, please?

A. Yes.

Mr. LILLICK: I offer this in evidence as our next exhibit, "Silver Line Ltd. Exhibit 2."

The COURT: It will be so received.

(The document was marked "Silver Line Exhibit 2.")

Mr. LILLICK: Q. Captain, with this Exhibit No. 2 before you, your order to your helmsman was left 20 degrees?

A. Yes, the order to the officer of the deck. [155]

Q. The officer of the deck?

A. Yes.

Q. And thereafter the "Chicago" commenced to swing to her port?

A. Yes.

Q. Am I right in saying that you do not believe that the "Chicago" had stopped swinging left on that order when you first saw the "Silver Palm"?

A. That was my impression. I was forward of the compass and forward of the wheel.

Q. The "Chicago" is a vessel that maneuvers very readily, is she not?

(Testimony of Herbert Emory Kays.)

A. Yes.

Q. That is one of the essential qualities of a cruiser that she not only has speed, but that she maneuvers very quickly upon her rudder?

A. It is a desirable qualification.

Q. And is a qualification that the "Chicago" had?

A. Yes.

Q. Do you personally know whether the order "Left 20 degrees" was carried out promptly by the helmsman?

A. I do not remember looking at the wheel but I suppose that it was.

Q. How far was the helmsman from you?

A. About six feet behind me.

Q. So that you could not see the actual physical operation of the wheel when he threw the rudder over?

A. Not unless I turned around.

Q. In your opinion, captain, if the helmsman threw his rudder over in prompt execution of that order, how long would it take for the "Chicago" operating under conditions then existing, to have turned that 20 degrees?

A. Probably half a minute. May I qualify that statement?

Q. Yes.

A. The helmsman would start meeting her before she reached it, when he was told to arrive at 20, indicating a new course.

Q. And your first answer is correct, that it would

(Testimony of Herbert Emory Kays.)

take half a minute to swing her over on that course, the helmsman meeting her with the rudder as you say?

A. I believe it would.

Q. It was the physical operation with which I was concerned. Then would you say it was half a minute from the time you saw the "Albion Star" last until the "Silver Palm" came in view?

A. Yes. [156]

Q. Then if we have the speed of the "Albion Star" at that time and the speed of the "Silver Palm" at that time, and your speed, we can reconstruct at least with some accuracy the relative positions of the three vessels, can we not?

A. It could be done within limits if you knew the speed exactly.

Q. You would not be willing to give me, from your knowledge of this case, where you think these three vessels were relatively to each other at the time, then, when the "Silver Palm" came in sight?

A. I could give that with no exactitude, because, as I say, I did not observe them all at the same time.

Q. You say with no exactitude. How much exactitude are you computing? Will you explain that a little, captain?

A. My estimate of the position of the "Silver Palm" when I sighted her, was seven or eight hundred yards distant, about twenty degrees on our port bow. If I had to give an estimate of the position of the "Albion Star" at that time, I would say she was somewhere on our starboard beam, but I don't know, I did not look at her.

(Testimony of Herbert Emory Kays.)

Q. And that reconstruction of it, in your own mind, is due to your considering the fact that you had given orders on the "Chicago" and was turning left?

A. Yes.

Q. That is correct?

A. Yes.

Q. So that when you saw the "Silver Palm" you would say that the "Albion Star" was approximately abeam the "Chicago"?

A. I would say she was on our starboard hand. Approximately abeam, I believe would be too exact.

Q. Would you say she was forward of your beam?

A. I do not say she was forward of our beam, no.

Q. Then, to put it baldly, you feel that you are unable to give me a diagram of the relative positions of the "Albion Star" and the "Chicago" at the time the "Silver Palm" came in sight, although prior thereto you had been watching the "Albion Star" off your [157] starboard bow?

Miss PHILLIPS: I will object to the question on the ground that it has been asked several times and answered.

Mr. LILLICK: Then the answer would be "No" I take it?

Miss PHILLIPS: I think the captain has very fully answered. He has given several answers to the question.

The COURT: It is probably the concluding question. Is your answer "No"?

(Testimony of Herbert Emory Kays.)

A. I would like to hear the question again before I state.

The COURT: Read the question.

(The last question was repeated by the reporter.)

A. I feel that I would be unable to give a correct diagram.

Mr. LILLICK: Q. After seeing the "Silver Palm" seven or eight hundred yards away, and you say approximately 20 degrees on your port bow—that is correct?

A. Yes.

Q. Your first order to the helm was full left over?

A. Yes.

Q. How long after that was it until you gave the order "Full right rudder"?

A. I should say between ten and twenty seconds.

Q. Your vessel was, at the time you gave that order, still swinging to the left, was it not?

A. I thought she was.

Q. Then if she was, captain, giving her a full left rudder would have accelerated her movement toward the left immediately, would it not?

A. Yes, she would be accelerated.

Q. She would answer that at least very quickly?

A. Yes.

Q. As she answered it, I understood your answer to Miss Phillips' question this morning, not only would she have pivoted toward the left, but the body of the "Chicago" would have gone to the left with the rudder: Is that correct?

(Testimony of Herbert Emory Kays.)

A. No, the body of the "Chicago" would have gone to the right first.

Q. It would have gone to the right?

A. Yes.

Q. And then gone to the left?

A. As she continued to turn, [158] the body would turn to the left around the curve, there would be a translation of the whole mass of the ship to the right.

Q. How pronounced is that first movement of the vessel in opposition to the rudder? Does the stern of such a vessel as the "Chicago" go over an arc of many feet?

A. Well, the stern goes first, but the whole vessel is translated.

Q. The whole vessel is translated into a sidewise motion?

A. Yes.

Q. How far would you say on the arc that the ship, the vessel as a whole, would be from her pivoting point?

A. With a full left rudder?

Q. A full left rudder as you gave it this morning.

A. I would say approximately 50 yards.

Q. When, after having given a full left rudder, ten or fifteen seconds later followed by full right rudder, would she, in the same manner translate her motion 50 yards to the left?

A. It would have the same effect.

Q. It would have the same effect, and go approximately the same distance?

(Testimony of Herbert Emory Kays.)

A. Yes.

Q. How long after the order full left rudder was it the two vessels came in contact?

A. I did not take the time but I would estimate it approximately at two minutes.

Q. Yesterday you testified that you had a dead reckoning recorder upon the "Chicago." Was that in operation at the time of the collision, do you know?

A. It had been in operation. There was a short period when the navigator had been resetting the instrument, and when the recording pencil did not bear on the chart, and therefore made no track. The machine was in operation but there was some of the distance there where it did not make a mark, I don't remember when that was. It was somewhere around 8 o'clock.

Q. Lt. Commander Gray was the navigating officer that morning, was he?

A. Yes.

Q. You were conferring with Lt. Commander Gray in the pilot house [159] when the whistle of the "Albion Star" was reported to you, were you not?

A. Yes.

Q. Were you working with the dead reckoning recorder then?

A. I believe we were leaning over the chart desk, not over the recorder.

Q. Might I ask what you were doing at that time, captain? Were you working at the course of the "Chicago"?

(Testimony of Herbert Emory Kays.)

A. I don't remember what we were doing.

Q. When did you learn that the dead reckoning recorder was not recording?

A. I learned that later, I don't remember just when.

Q. Can you tell me now whether at 8 o'clock on the morning of October 24 the dead reckoning recorder had no pencil in the arm, or point?

A. I would like to have that question read.

The COURT: Read the question.

(The last question was repeated by the reporter.)

A. I could not tell you. I did not make any statement that it did not have any pencil in the point.

Mr. LILLICK: Q. I misunderstood you. I understood that the reason for it not recording was that there was not a pencil.

A. The pencil did not bear on the paper for some reason, I have forgotten the reason.

Q. And you don't know what part of that time it was not recording?

A. No, I don't remember directly when that was. It was a short period.

Mr. LILLICK: Miss Phillips, may we have the dead reckoning recorder tomorrow?

Miss PHILLIPS: Yes, we will have it.

Mr. LILLICK: Q. How thick are the plates on the side of the "Chicago"?

Miss PHILLIPS: Might I say as to that, counsel, that it seems to me that it is desirable to have absolute accuracy where accuracy [160] can be ob-

(Testimony of Herbert Emory Kays.)

tained. I have wired the Mare Island Navy Yard for an exact statement of the exact dimensions of all the plates on the "Chicago" that were injured, so that if the captain does not know exactly, I will be able to have exact evidence on it.

Mr. LILLICK: I will withdraw the question on Miss Phillips' offer. Might I ask, as request for information, I would like furnished by you the length over all of the "Chicago", the length on the water line, the beam, her draft at the time of the collision, her displacement at the time of the collision at that draft, the tons per inch immersion, her total horse power, her horse power in use going ahead at the time of the collision, her backing power at the time of the collision, the type of her turbines with name, if possible, or I will say the type of her turbine reduction gears with their name, how many oil-burning boilers she had and their name, that is, the manufacturer, and the heating surface of the boilers.

Miss PHILLIPS: As to the first part regarding the length, breadth and beam of the ship, that model was designed with the express purpose of having in court here at all times the exact dimensions. The ship's draftsman yesterday testified that that model was made to the scale of one-sixteenth of an inch so that the measurements may be made if counsel wants them. That was the purpose of having that model.

Mr. LILLICK: That is as to length, breadth and depth, but not draft, heating surface of the boiler, etc. I would like to have it all together so that we can both refer to it.

(Testimony of Herbert Emory Kays.)

Miss PHILLIPS: Do I understand you now you want somebody to come down and measure the ship in addition to that model?

Mr. LILLICK: I certainly do not, and I will take your word as to each of the matters I have asked for, and I will stipulate to them in the record as being correct.

Miss PHILLIPS: I do not want counsel to ask me to stipulate [161] to things when I have a witness testify to them. I was not on that ship navigating it at this time and I never measured it, but I had a witness in court yesterday who had taken the official blueprints on which the "Chicago" was built, and he checked the model by the blueprints and the scale of the model is one-sixteenth of an inch, to the foot. I can get a ruler upstairs and we can measure in court any outside dimensions that counsel wants without stipulating.

Mr. LILLICK: I have no objection to the model. All I want to do is, if you can give me information in reply to what I have asked, we need have no witness.

Miss PHILLIPS: In regard to the power of the engines and all that, I am prepared to show all that counsel asks and more, but when it comes to dimensions, you can refer to the model. I do not care to stipulate to it because the model is there.

Mr. LILLICK: Again I think you are talking about something that means nothing.

Miss PHILLIPS: Very well, let us go ahead.

The COURT: It was in the nature of an offer to stipulate?

(Testimony of Herbert Emory Kays.)

Mr. LILLICK: Yes. Q. The wind blowing that morning was blowing in a direction almost exactly from the direction in which the "Silver Palm" appeared was it not, captain?

A. Yes, I believe it was very near from that direction.

Q. Do I understand that you heard no whistles from the "Silver Palm" at all until the vessels were almost in contact?

A. That is correct.

Q. What was the first whistle you heard from the "Silver Palm"?

A. I remember only of hearing three blasts.

Q. Did those follow your three blasts or did they precede your three blasts?

A. They followed our three blasts.

Q. They followed your three blasts?

A. Yes.

Q. Now captain, did you know that you were in the regular course of steamship traffic of vessels plying from the Columbia river ports [162] to San Pedro?

A. Yes, I knew we were approximately in their track.

Q. Weren't you in exactly that track? Wasn't that the usual and customary distance off shore for vessels to be proceeding up and down the coast?

A. Most coastwise vessels go closer in shore than that, I believe.

Q. It was, however, in the regular track of the intercoastal and foreign liners going back and forth on the west coast?

(Testimony of Herbert Emory Kays.)

A. Yes, I believe it would be.

Q. Indeed, one was on your inside going north, and another was on your outside going south that morning?

A. Yes.

Q. Has the "Chicago" her own tactical and maneuvering data worked out?

A. We have some tactical data.

Q. I understood that the tactical data on the "Chicago" had not yet been worked out and that you had obtained the data used by you in part from the "Louisville"?

A. We have a few curves of tactical data which, to the best of my knowledge, were taken by the "Chicago" but not while I was on her.

Q. By tactical data you are referring to the action of the "Chicago" in turning right, left, proceeding ahead, reversing and the other maneuvers through which the vessel would be put?

A. This data was confined to turning circles only.

Q. To turning circles only?

A. Yes.

Q. The usual practical and maneuvering data for a cruiser, however, covers not only turning but all of the other times within which the vessel may be put through certain movements: Isn't that true?

A. I do not exactly understand your question.

Q. I will put it differently. Tell me, captain, what the term "Tactical data" means as applied to the "Chicago".

(Testimony of Herbert Emory Kays.)

A. The term ordinarily means turning data of different speeds and different rudder angles.

Q. Does the maneuvering data mean the same thing? [163]

A. That is maneuvering data.

Q. So that they are synonymous terms, tactical data and maneuvering data?

A. I believe them to be synonymous, yes.

Q. Then you only have a part of your tactical data on the "Chicago"?

A. Yes, I do not believe that we have complete tactical data.

Q. Is that not unusual on a vessel that has been in commission as long as the cruiser "Chicago"?

A. No, I do not believe so because they make several vessels alike, exactly alike, and they often use data taken by one vessel for several.

Q. Is the "Louisville" a sister cruiser of the "Chicago"?

A. She is as to the main characteristics of the hull below, not entirely as to the hull above the water.

Q. Is there any other cruiser in the navy exactly like the "Chicago"?

A. The "Houston" and the "Augusta" are practically like the "Chicago".

Q. From 7:26 that morning, captain, up to the actual collision with the "Silver Palm", you were blowing fog whistles on the "Chicago" were you not?

A. I know we were blowing part of the time. As

(Testimony of Herbert Emory Kays.)

to whether we were blowing them all the time, I don't remember.

Q. What part of the time do you remember that you were blowing fog whistles?

A. I know we were around 8 a.m.

Q. How much of the time between 7:26 and 8 o'clock were you not on the bridge?

A. I was below possibly ten minutes of the time.

Q. And during the remainder of that time what was the condition of the weather as to fog?

A. There were intermittent patches, as I remember, the sun shone most of that time. It was drifting patches of fog.

Q. Yet you kept blowing the fog signal, did you not, with the fog patches, as you say, about you?

A. Yes, we ran into fog patches.

Q. But even before running into the fog patches you would blow the fog signals, would you?

A. I expect we did, yes. [164]

Q. There was no change made in your speed of twelve knots to 18 knots because of the fog when you ordered the acceleration of speed, was there?

A. May I have that question read?

The COURT: Read the question.

(Last question repeated by the reporter.)

A. No.

Mr. LILLICK: Q. In other words, no change was made in the speed of the "Chicago" at any time that morning because of fog, until you heard the signal from the "Albion Star": That is correct, is it not?

(Testimony of Herbert Emory Kays.)

A. That is correct.

Q. Can you tell me something about this test that was to be made in the boiler room, captain? Will you tell me what you know about it? I assume it was an engine room test but will you tell me what you know about it?

A. There had been installed in two of our boilers a new type of furnace lining, plastic furnace lining. To be set properly, it was recommended that this be put through a certain drying process which involved using these two boilers at full power for at least four hours, and we planned to use that full power on this trip to San Francisco if the weather was suitable.

Q. That was the reason, was it not, that you were proceeding at 18 knots an hour while you were blowing the fog signals that morning?

A. Yes.

Q. Is hydrecon a new boiler lining on the "Chicago", or had you used it before?

A. I believe it is new on the ship.

Q. That was the first time, then, on the ship, that hydrecon had been put in her boilers?

A. Within my knowledge, yes.

Q. Had you ever had any experience with it before?

A. No, I believe it is some new material.

Q. Did the engineering department confer with you that morning before you started on this test run with respect to what cooperation should be had between you on the bridge and them in the engine department?

(Testimony of Herbert Emory Kays.)

A. We had no conference that morning, [165] we had conference a few days before when we had gotten permission to carry out this test.

Q. These conferences had to do with you upon the bridge putting the vessel at a standard speed of 18 knots, did they?

A. We in conference decided that we would steam at a speed of 18 knots, the weather permitting, to carry out this test, in carrying out this drying process.

Q. I notice that the speed in the formation was 12 knots and marked standard 12, and in your own speed log, also standard, you had 18 knots. Is it correct that the captain of the vessel, when it is at sea, sets his mileage or speed on the standard basis of so many knots an hour?

A. The captain does not always set the standard speed. It might be set by a higher authority or by permission of higher authority, but for our maneuvering we ordinarily set a standard speed for convenience.

Q. What do you usually set standard speed?

A. Anything that is so ordered.

Q. Isn't it usually twelve knots in ordinary maneuvers, where you are not going under forced speed?

A. Our customary standard speed is twelve knots on cruises.

Q. When a vessel is proceeding either independently or in formation from such a port as San Pedro to San Francisco or Bellingham Bay, or

(Testimony of Herbert Emory Kays.)

other ports on the coast, the customary speed is 12 knots an hour: That is true, is it not?

A. Under the present order that is the customary speed, yes.

Q. You used the expression "authorized speed". When a direction is given to you as captain of the "Chicago" in which the expression is used "You are authorized to proceed at" or some similar expression with "authorization" in it, it is carried out, is it not, as an instruction?

A. It is not mandatory; if we are authorized to do something and want to do something else, we get [166] permission to do that.

Q. Perhaps I am not making myself clear. My understanding is that your orders that day, indeed I think Admiral Laning yesterday said that he had authorized you to proceed independently at 18 knots. I am seeking to find out whether that expression of authorization to proceed at 18 knots did not mean a direction to you to proceed at 18 knots.

A. No, it did not.

Q. Are you qualifying that because of the discretion that is always with the captain to change his speed if circumstances necessitate it, or are you answering that it did not because you are qualifying it? Is that clear?

A. The captain of a naval vessel is allowed to use his discretion for the safety of his vessel and also in the navy when we are authorized to do something it is not a mandatory order to do it.

(Testimony of Herbert Emory Kays.)

Q. Then let us put it this way: Having been authorized that morning to proceed at 18 knots an hour, though your usual and customary speed is 12 knots an hour, you did proceed at 18 knots an hour on the trial of these boilers. That is the fact is it not?

A. Yes.

Q. Captain, is there any question in your mind but that the attention of your lookouts and those on your bridge that morning were at least to some extent centered upon the "Albion Star" which was in the fog and not yet in view?

Miss PHILLIPS: Just a minute. I think the question requires the captain to look into the minds of some half a dozen men on duty, and requires him to speculate.

Mr. LILLICK: I withdraw the question.

Q. In any event, captain, you had not been looking toward the point at which the "Silver Palm" came out of the fog at the time she did, had you?

A. I do not remember looking exactly in that direction. I was looking ahead.

Q. But you did not see her until she was seven or eight hundred [167] yards away?

A. No.

Q. And then only when someone else—

Miss PHILLIPS: Just a minute, I think counsel's question assumes something there.

Mr. LILLICK: It is my understanding that the captain has testified he saw her at seven or eight hundred yards.

(Testimony of Herbert Emory Kays.)

Miss PHILLIPS: But not coming out of the fog, the witness has never testified to that.

Mr. LILLICK: Again I may be mistaken. I withdraw it.

Q. In your examination before the court of inquiry, captain, do you remember testifying "Q. When you first saw the 'Silver Palm' was she in the act of emerging from a fog bank, or had she already cleared it? A. When I first saw her she was in plain sight but it wasn't a distinct wall of fog. It was hazy weather. That is my recollection of it. I hadn't been looking in that direction just prior to that."

A. Yes.

Q. And that testimony you would repeat today, wouldn't you?

A. Yes.

Q. Can you give me the last fix that you had in coming up the coast prior to sighting the "Silver Palm"?

A. Navigational fix?

Q. Yes.

A. When we were in sight of Anacapa Island we had a fix.

Q. Do you remember what that fix was?

A. I can not give you the latitude and longitude.

Q. You say you can?

A. I can not give you the latitude and longitude.

Mr. LILLICK: I think that is all.

(Testimony of Herbert Emory Kays.)

Redirect Examination.

Miss PHILLIPS: Q. How far off shore were you navigating that morning, captain?

A. Approximately 20 miles.

Q. Approximately 20 miles?

A. Yes.

Q. You said a moment ago that twelve knots was the customary speed for cruisers under the present order. When was that present order [168] given, do you recall?

A. It was issued within the last year.

Q. Do you remember the reason of the order within the last 12 months?

A. That is the economical speed of the cruisers.

Q. In giving the time which it takes to swing the ship under a certain helm or change of course, does it depend in any degree upon the degree of the rudder that is used?

A. It depends on two things, the degree of rudder and speed.

Q. So that in giving an estimate of how long it would take to change your course from any particular course to another course, that would depend partly on what speed the ship was making and partly on the rudder or helm: Is that correct?

A. That is correct.

Q. Captain, did you look at the watch and record the time at any of the times which you have referred to in your testimony?

A. I did not.

Q. You have spoken about patches of fog that

(Testimony of Herbert Emory Kays.)

you saw that morning. Let us have again your vision ahead or your estimate of visibility ahead at the time you ordered two thirds ahead, after you had sighted the "Albion Star" and after your stop order?

A. My recollection is that I could see at least a mile ahead.

Q. And what was the visibility to your port?

A. There was fog to the port but I don't recall how far the visibility was.

Q. Captain, when you gave your estimate of the distance of the "Silver Palm" when you first sighted her, as from 700 to 800 yards, did you mean that that estimate of 700 or 800 yards is the same kind of visibility that you had on your port at the time that you ordered two thirds ahead?

A. I should say approximately the same. I do not remember looking on the port beam.

The COURT: We will take a recess now until 2 o'clock.

(A recess was here taken until 2 o'clock p.m.)

[169]

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Afternoon Session

HERBERT EMORY KAYS

recalled

Redirect Examination Resumed.

Miss PHILLIPS: Q. Captain, you referred to the fact that you were on the bridge leaving San

(Testimony of Herbert Emory Kays.)

Pedro. Was it something unusual for you to be on the bridge for 24 hours?

A. Not at all unusual, that is the routine at sea, particularly for working in formation.

Q. Does that apply in any particular kind of weather, or how is it?

A. In any weather, if we are in formation I am on the bridge practically all the time.

Q. You have used the term "fog patches" or "fog banks", or rather all of us have used those two terms. Do you make any distinction between them?

A. Well, a fog bank, I distinguish as something heavier and more marked than a fog patch. A fog patch might have marginal visibility, partial visibility.

Q. Which did the "Silver Palm" come out of?

A. That was a fog patch, I considered it was patchy that morning.

Q. You have referred in your testimony to the fact that when the rudder is put over the body of the ship moves to the side opposite the direction in which the rudder is put for a short interval. I would like to show you the eighth edition of Knight on Seamanship, Plate 114 facing page 331. Does this plate illustrate what you mean?

A. Yes.

Q. I would like to have you look at it and see if that illustrates what you mean?

A. Yes, that shows what I mean.

Q. I wish you would show the court that plate

(Testimony of Herbert Emory Kays.)

and point out what you mean when you speak about the body of the ship moving over, and so on. Will you pick out on that the matter you think would be of interest to the court, and explain what you mean by that body of the ship moving over?

A. As the rudder is put over in this [170] illustration, it would be put to the left, and the stern of the ship moves to—in this case the rudder is put to the right, the stern of the ship moves to the left; the bow of the ship starts moving to the right, but not so much—the stern moves to the left farther than the body of the ship moves to the right. The pivoting point of the ship is thereby translated to the left, and as they continue around the circle the stern of the ship follows the dotted circle on the outside and the bow of the ship follows the circle on the inside, and the pivoting point of the ship follows a circle somewhere between upon the maneuverability of the ship.

The COURT: It is a sort of centrifugal effect?

A. Yes.

Miss PHILLIPS. Q. Does that plate there I just showed you, Plate 114, show the track of the stern, the pivoting point and the bow?

A. Yes, it shows what purports to be those tracks.

Q. Captain, when the engines are backing full speed is the rudder effective to change the ship's course?

A. The rudder is effective in varying degrees, depending upon the speed ahead. If you put the

(Testimony of Herbert Emory Kays.)

rudder over, the ship will start to turn in the direction in which the rudder is put, but as the vessel slows, the rudder becomes less effective until it has no effect, and any effect would be to turn the opposite way.

Miss PHILLIPS: That is all.

Recross Examination.

Mr. LILLICK: Q. The illustration to which you referred in Knight Upon Seamanship, Plate 114, I think it was, is an illustration of the effect of a change in the rudder that is equally effective in merchant vessels as well as in cruisers, is it not, captain? Perhaps that question is not clear, or is it?

A. I understand it. It is equally effective in a degree, depending upon the maneuverability of the vessel. [171]

Q. It depends entirely upon the hull of the vessel, and to a large degree, perhaps larger than any other element involved, upon the sharpness of the stem of the vessel and the bluntness of the bow?

A. The sharpness of the stem and the bluntness of the bow would probably affect the pivoting point of the vessel.

Q. And also to some extent the rapidity of the motion of the stem: Isn't that true?

A. I do not quite understand that question.

Q. A vessel with a sharp stem, as compared with one with a bluff bow would turn more quickly from her rudder than would the bluff bow vessel: That is true is it not?

(Testimony of Herbert Emory Kays.)

A. Not necessarily. The turning is more controlled by the shape of the underwater stern, and the size of the rudder. The bow does not make so much difference.

Q. And then you say there would be no difference between the rapidity with which a vessel of the type of the "Silver Palm", with a hard right rudder than a vessel with the sharp prow of a cruiser?

Miss PHILLIPS: I do not think he said that. I do not think you are quoting what the captain said.

Mr. LILLICK: I am not trying to quote the captain. I am trying to express what I want the captain to answer. Perhaps I had better reframe that question. Q. It is my understanding, captain, that a vessel with a sharp cutaway stem of the cruiser "Chicago" will take a full right or full left rudder more quickly than a vessel of the type of the "Silver Palm". Am I right?

A. I would say, on account of the shape of the stern and the rudder.

Q. Would you say that the shape of the bow has nothing to do with it?

A. I think the shape of the bow would tend to move the pivoting point farther forward and therefore the bow in this instance would turn in a less distance, but the stem would turn it more.

Q. Which of the two vessels would have a quicker turning circle, a vessel with a sharp bow or a vessel with a blunt bow?

A. I don't know. [172]

Mr. LILLICK: That is all.

(Testimony of Herbert Emory Kays.)

Further Redirect Examination.

Miss PHILLIPS: Suppose we added to that last question that counsel asked, which would turn quicker, a vessel with a sharp bow and a stern cut away such as the "Chicago" had, or a vessel with a bluff bow and a stern not cut away, such as the "Chicago" had. Which would turn more quickly?

A. The vessel with the stern cut away would turn more quickly, no matter how the bow was.

Q. Looking at this model of the "Chicago" can you make a comparison between the extent to which the "Chicago" is cut away under the stern, and other vessels that you know of. I wonder if my question is clear. Is there anything unusual about the way, or is it usually the form of the stern of the ship, with the stern cut away like this?

A. Her stern is cut away more than the usual amount of vessels, or men of war, that I have seen.

Q. That is, you mean it is unusually cut away even for men of war?

A. Yes.

Q. You are not making a comparison with merchant vessels are you?

A. No, I am not familiar with merchant vessels.

Q. You have never commanded merchant vessels?

A. No.

Miss PHILLIPS: That is all.

Further Recross Examination.

Mr. LILLICK: Q. The reason why the cruiser "Chicago" was probably so cut away was to in-

(Testimony of Herbert Emory Kays.)

crease the efficiency of her maneuverability: That is true is it not?

A. I believe that is true.

Q. It is an element maintained by the scouting force of the United States for quick and rapid service?

A. Yes. [173]

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### JULIUS KARL DEMING

called for the United States, sworn:

Miss PHILLIPS: Q. What is your name?

A. Julius Karl Deming.

Q. What is your business?

The COURT: What is your vocation or calling?

A. I am a seaman, first class.

Miss PHILLIPS: In the United States Navy?

A. Yes.

Q. How long have you been in the navy?

A. Three years and 11 months.

Q. Are you attached to a ship?

A. The U.S.S. "Chicago."

Q. When did you join the Chicago?

A. March 9, 1931.

Q. 1931?

A. Yes.

Q. Were you on duty at the time of the collision?

A. Yes.

Q. Whereabouts were you stationed?

A. I was the helmsman.

(Testimony of Julius Karl Deming.)

Q. What time did you go on duty?

A. About 7:52.

Q. When did you actually take the wheel?

A. About that time.

Q. About that time?

A. Yes.

Q. What had been your experience at the helm of the "Chicago" up to the time of the accident?

A. About six months.

Q. When you took the wheel what course were you ordered to steer?

A. 350.

Q. Do you remember who gave you those orders?

A. I received the orders from the helmsman.

Q. You mean the helmsman before you?

A. That I relieved, yes.

Q. Whom you relieved?

A. Yes.

Q. Who was the officer of the deck?

A. Mr. Minter.

Q. When you took the wheel at the time you have mentioned, what course did you steer?

A. 350.

Q. How did you know that you steered that course?

A. The course of the gyro repeater was at 350.

Q. According to the gyro repeater?

A. Yes.

Q. Do you remember what was the next helm order you got? [174]

(Testimony of Julius Karl Deming.)

A. "Change course from 350 to 330."

Q. Who gave you that order?

A. The officer of the deck.

Q. The officer of the deck?

A. Yes.

Q. Did you execute it?

A. Yes.

Q. I wish you would explain to the court now what you did when you got that order to change course?

A. I repeated the order and then I followed it up.

Q. How is that?

A. I repeated the order that I received and then I followed it up.

Q. I want you to imagine that you were at the helm of the "Chicago" and just tell us what you did when you got the order to change your course 20 degrees, from 350 to 330.

A. Well, the officer of the deck would say, "Left rudder" and then he would give me new course, and I would say "Left rudder" and I would commence going left, and then he would say "New course" and I would say "new course", 330 that I had received, and I would just carry out the order.

Q. What degrees of the rudder did you use?

A. We used the standard rudder, which is 15 degrees.

Q. What was your next order, I mean what was the next order you received as to the helm?

A. The next order was hard left.

(Testimony of Julius Karl Deming.)

Q. Who gave you that order?

A. The captain.

Q. What was the next order?

A. Hard right.

Q. How long elapsed between those two orders?

A. I would say about ten seconds.

Q. Had you executed the order for full left rudder when you got the order for hard right?

A. No, I had not.

Q. Can you tell me how far you had gotten toward executing it?

A. At the time I had on ten degrees right rudder. I came from ten right to ten left and then I executed the full right.

Q. Let me see if I understand you. The order had been given to change to come left 20 degrees, 330, and you said when you got that order— [175] You say what you did say. Let us have that again.

A. After I came on course 330?

Q. Yes.

A. Well, I received an order for full left rudder, I came from 10 right to 10 left, and I received the order for full right rudder.

Q. That is what I want to get at. How did you happen to have on a 10 degree right rudder at the time that the officer gave you the order full left rudder?

A. I was checking on my new course.

Q. What do you mean by checking on your new course?

A. I had on 15 degrees left rudder to come to

(Testimony of Julius Karl Deming.)

330, and then I had to put on the opposite rudder, which will stop it, that is what I call checking on the course.

Q. I have heard the expression sometimes about steadying on a course. Is that what you mean by checking?

A. That is the same thing.

Q. How long does it take to put the rudder from 10 degrees right to 10 degrees left?

A. I would say about between five and ten seconds.

Q. Had the ship had time to swing on that full left rudder order before you got the order of full right?

A. No, it would not make any effect on it at all.

Q. What degree of rudder did you understand full right rudder or full left rudder to mean?

A. Full is 30 degrees.

Q. Thirty degrees?

A. Yes.

Q. Are you sure it is 30 degrees?

A. I mean full is 30, but I had 35, that is the extreme, the amount of rudder that can be used.

Q. That is what I meant, I wanted to get clear in my mind. What is the most degree of rudder that you could put on?

A. 35.

Q. When you got the order hard right rudder, what did you put it to?

A. Thirty-five degrees.

Q. What rudder did you have on at the time the two ships hit?

(Testimony of Julius Karl Deming.)

A. Thirty-five degrees rudder. [176]

Q. Did you observe what the heading of the "Chicago" was at the moment of the collision?

A. No, I did not.

Q. Do you know whether the "Chicago" had had time to swing under the hard right rudder?

A. Yes.

Q. What is your answer?

A. Yes.

Q. You think she had swung?

A. She had swung.

Q. Do you know how much?

A. No, I do not.

Q. Now did you observe the compass after the collision?

A. No.

Q. Do you know how much the "Chicago" swung under the force of the blow?

A. I do not.

Q. You did not look at the compass to see?

A. No, I was relieved immediately after the collision.

Q. Did you observe any ship to your right or to your left that morning while you were at the helm?

A. I did not see the ship on the right. I saw the "Silver Palm" just immediately before the collision.

Q. Were you paying any attention to the objects around the ship?

A. No, I did not.

Q. What was your attention concentrated on?

(Testimony of Julius Karl Deming.)

A. I had to watch the compass and the rudder all the time.

Miss PHILLIPS: You may cross examine.

Cross Examination.

Mr. LILLICK: Q. How did you happen to see "Silver Palm" if your attention was directed to the compass?

A. I had it on the full rudder, and the officer of the deck told me to hold it there and I glanced up just then, I had executed all my orders up to that time.

Q. So that, from the time you got the order hard right rudder, you are unable to tell us how far she swung over on that right rudder, and the reason is that you were looking at the "Silver Palm." [177]

Miss PHILLIPS: Just a moment, I object to counsel putting the question in any such way as that. The witness did not so testify and it is very unfair to the witness.

Mr. LILLICK: I think it is a proper question.

Miss PHILLIPS: I do not think it is at all. I would like to have the question read back and the court rule on it.

The COURT: I think it can be put in another way. I will sustain the objection.

Mr. LILLICK: Q. I will put it in another way. You have just testified that after you had received the order full right rudder you executed the order: Is that right?

A. Yes.

(Testimony of Julius Karl Deming.)

Q. And you looked up to see why the order had been given: Is that right?

A. No.

Q. You tell me.

A. I put on my full right rudder, and acknowledged it to the officer of the deck, and at the time I was looking right at my compass, that is why I know she was swinging, and he told me to hold it. After I received that order I glanced up then.

Q. Then you looked up?

A. Yes.

Q. And kept on looking at the "Silver Palm" until the time of the collision?

A. It was just a matter of less than five seconds.

Q. And during that five seconds you are unable to tell us what the compass was showing?

A. Yes.

Q. When you came on watch that morning who gave you the course to steer?

A. The helmsman that I relieved.

Q. What was that course?

A. 350.

Q. What time was that?

A. 7:52.

Q. 7:52?

A. Yes.

Q. What time was it when you got the next order?

A. I don't know.

Q. What was the next order?

A. It was left, 330. [178]

(Testimony of Julius Karl Deming.)

Q. Were you then steering on a course of 350?

A. Yes.

Q. When you commenced to execute the order left 20 degrees, did you throw your rudder full over and commence to catch the swing, and then catch her as she returned over with a return rudder?

A. I just put it in 15 degrees left rudder.

Q. Instead of 20?

A. Fifteen?

Q. Why did you put it on 15 instead of 20?

A. Fifteen is standard rudder, that is unless I receive orders to use more.

Q. Was the order 20 degrees left from your course?

A. Repeat that.

Q. My understanding was that when you were steering a 350 degree course the order was left 20 degrees. Am I right about that?

A. No, they did not say that, he just said "Left, and the new course will be 330."

Q. Left, the next course will be 330?

A. Yes.

Q. Then you turned your rudder what you think is a standard turn, to get your course 15 degrees left. How long would you have left that on a 15 degree change before adding the other five degrees?

A. Adding what five degrees?

Q. The difference between 15 and 20. You do not understand that?

A. No.

Q. What I am trying to visualize is, because I am not accustomed to handling the rudder, the dif-

(Testimony of Julius Karl Deming.)

ference between the 15 degrees that you are talking of or have testified to as the standard change on your rudder, and following that with the 20 degree order that you had on your course. Will you tell me the difference so that I will understand it?

A. I do not understand what you are talking about.

The COURT: Q: Why didn't you make a 20 degree change instead of 15?

A. Twenty degrees of the rudder?

Q. That is what he is talking about.

A. I told you I used 15 degrees unless I received orders for more.

Q. Didn't you receive orders for more?

A. No. [179]

Mr. LILLICK: Q. Then if I understand you, Mr. Deming, your original order was from a course of 350 to left rudder? That is right so far, is it?

A. Yes.

Q. And following that the order "New course 330", am I right, so far?

A. Yes.

Q. Now how long after you made the 15 degrees was it, or would it have been, that you carried out the full order 20 degrees, that you had drawn over the additional five degrees?

A. You are speaking of the rudder?

Q. The point is this. You say it was 350?

A. Yes.

Q. The difference between 350 and 330 is 20 degrees.

(Testimony of Julius Karl Deming.)

The COURT: He wants to know why the difference between the two courses that you were following, of 350 and 330 which makes a difference of 20 degrees, why you only gave it 15 degrees.

A. Fifteen degrees is enough. When I figured it had been on long enough, then I would check.

Mr. LILLICK: Q. Tell me what you would have done if you had been ordered to change your course from 350 to 310?

A. I would have done the same thing.

Q. You would have given the standard turn to your rudder of 15 degrees?

A. Yes.

Q. And then waited?

A. Yes.

Q. And would you have left it on the 15 degrees until the vessel had finally swung around to 310?

A. No.

Q. Tell us what you would have done?

A. Well, it is all according to circumstances, it is according to the speed we are going. If we are going along fast I would check it off. When I got within 15 degrees of the course I would check it off and wait according to how fast I am traveling, and the wind and all that.

Q. How fast was the "Chicago" going when you received this order of left rudder, followed by a new course of 330? [180]

A. I don't know.

Q. Then how would you come to a conclusion with respect to how rapidly you would change your rudder, when you have just told me it depends on the speed of the vessel?

(Testimony of Julius Karl Deming.)

A. I have a compass in front of me that I can watch and see how fast it is turning.

Q. How fast did she turn this morning?

A. Well, I can not say how fast she was turning.

Q. The "Chicago" maneuvers very quickly, does she not?

A. Yes, she does.

Q. She is very tender on her rudder?

A. Yes.

Q. And the slightest change in your rudder of course would change the course of the "Chicago" that is true is it not?

A. Yes.

Q. So that, going back to this order that you received, as I understand you, you changed your rudder to 15 degrees, which was the standard, and held it there?

A. Yes.

Q. The "Chicago's" bow then fell off to port or left, and was in the swing, was it not, when you got the next order?

A. No, I was steady on 330, or pretty near so.

Q. What is the difference between steady and pretty near so? Had you gone by 330 or were you still going over toward 330?

A. I was slightly by 330, and just steadying down.

The COURT: When you say "slightly by" how many degrees were you by?

A. Perhaps about 2 degrees by 330.

Mr. LILLICK: Q. How long would you say

(Testimony of Julius Karl Deming.)

it was from the time that you turned your rudder left 15 degrees until you noticed that your compass read, say 327 or 328?

A. I could not say, I did not pay enough attention to it.

Q. How were the orders given that morning. Did you hear them as they started from the captain?

A. Yes.

Q. How did they come to you?

A. The officer of the deck gave me the new course left, and the new course 330. [181]

The COURT: Did you get your orders direct from the captain or did the orders come from the officer of the deck?

A. The captain gave the orders and the officer of the deck repeated them.

Q. In other words, you did not make the change on the captain's orders, you waited until the navigation officer gave the orders?

A. If the captain was on the bridge and gave me the order I would take it direct from him.

Q. But this morning he was not giving it direct?

A. He gave them all except the first change of course.

Q. You took those orders direct without going through the officer of the deck?

A. The officer of the deck repeated them?

Q. Even though he repeated them you were taking them direct from the captain?

A. Yes.

(Testimony of Julius Karl Deming.)

Mr. LILLICK: That I asked the other question, on the first order, left rudder, the order came to you from the officer of the deck?

A. Yes.

Q. But all the succeeding orders came direct from the captain?

A. Yes.

Q. And were not repeated to you by the officer of the deck?

A. Yes.

Q. After you noticed that the compass had changed to 327 or 328, you received the order of full left rudder, did you not?

Q. And when you received that order it came directly from the captain?

A. Yes.

A. Yes.

Q. No intermediary?

A. No.

Q. Did you throw your rudder over to 15 degrees on the full left when that order came?

A. No.

Q. How long does it take you to throw your rudder full left?

A. Approximately about between five and ten seconds.

Q. Did you commence to carry out the orders?

A. Yes.

Q. How far over did you go with your rudder on that full left rudder? [182]

A. I came from ten right to ten left.

(Testimony of Julius Karl Deming.)

Q. After you had changed from ten right to ten left I understood that you received an order full left. Am I wrong?

A. Yes.

Q. I am sorry; we will have to go over it again.

Miss PHILLIPS: I think counsel asked that last question with a double negative. I do not believe the witness answered the question the way that counsel wanted it.

Mr. LILLICK: Perhaps it will need only one other question.

Miss PHILLIPS: I would suggest that the question be read back to the witness.

Mr. LILLICK: Perhaps I can get at it in another way. The point of your compass was 327 or 328 degrees, that was at the time that you received the order full left rudder?

A. Yes.

Q. That is right is it not?

A. Yes, that is right, about 328.

Q. When the compass was around 327 or 328, in response to the order given you directly by the captain, of full left rudder, you started to comply with the order, did you not?

A. Yes.

Q. What did you do?

A. I changed from 10 degrees right to 10 degrees left.

Q. So that, if I understand you now, you threw the rudder over 20 degrees more from 327 or 328; Is that right?

A. No.

(Testimony of Julius Karl Deming.)

Q. Why not?

A. Because the left rudder that I put on did not have any effect on the ship at all.

Q. But you threw your rudder that you have spoken of as being what you used at a standard order, of 15 degrees?

A. Yes.

Q. On a hand wheel, did you not?

A. Yes.

Q. How big is that hand wheel?

A. It is possibly about that.

The COURT: Three feet in diameter?

A. Yes, I believe so.

Miss PHILLIPS: Q. Speak up, Mr. Deming.

A. He asked me if the wheel was three feet in diameter, and I told [183] him yes.

Mr. LILLICK: Q. You controlled that wheel by hand instead of by an electrical control?

A. Well, I don't know what controls the rudder, but the wheel handles very easy.

Q. With the spokes on the end of that three-foot in diameter wheel, you throw the wheel over?

A. Yes.

Q. By hand?

A. Yes.

Q. Had you made a complete circle with the wheel after that full left rudder was given?

A. You take it just like that and swing it around like that.

Q. You had made that motion?

A. Yes.

(Testimony of Julius Karl Deming.)

Q. As I understand that, the full left rudder is a 35-degree change, and that is the utmost change you can make. Am I right about that?

A. As a rule, 30 degrees is full rudder. 35 you only use in an emergency.

The COURT: Q. But that is the uttermost?

A. Yes, 35.

Mr. LILLICK: How many times would have to turn the wheel which you have described to me, to get 35 degrees left—one complete circle?

A. From where I was at the time I would use about one turn and a half, I believe so, I am not sure.

Q. You remember upon that morning, as you have just described, that when you got the full left rudder you turned it over, as you have just shown in court, with one motion?

A. Yes.

Q. After you had made that complete turn how long was it after it completely turned, until the order came full right rudder?

A. It came immediately while I was turning it.

Q. So that as soon as you turned it over you turned it back?

A. Yes.

Q. When you attempt to check the course after a change, you put the rudder in reverse, do you not, while it is swinging over?

A. Yes, you put it in the opposite direction from which it is swinging. [184]

(Testimony of Julius Karl Deming.)

Q. And on this morning when you had changed your course from 350 to 327 or 328, you were attempting then to check the swing by coming back to 330?

A. Yes.

Q. And it was at that time that you got the order full left, and as you have put it you instantly threw the rudder over to the full left?

A. Not to full left.

Miss PHILLIPS: Just a moment. Counsel is misstating the testimony of the witness again. He did not say full left.

Mr. LILLICK: I have misunderstood the witness then, if I have not understood that he made that complete circle, but the record will show.

A. I have said that I made that full circle when I made right rudder. I did not make the full turn of the wheel when I changed to left rudder.

The COURT: Q. When you went to left rudder you only took that many turns, but when you went to the right rudder you swung the full extreme?

A. Yes, I swung her all the way around.

Mr. LILLICK: To straighten that out, you received a change of course at 330, is that right?

A. Yes.

Q. You were attempting to check up on that course when you got the order full left?

A. Yes.

Q. It was when you got the order full left that you turned your wheel completely over, as you have described a moment or two ago?

A. No.

(Testimony of Julius Karl Deming.)

Q. Then you correct me. What did you do?

A. I grabbed down and pulled it half way up like that and turned it around.

The COURT: What do you mean by straight ahead?

A. You mean on the rudder?

Q. You were going on a course of 350?

A. Yes.

Q. Is that straight ahead?

A. 350?

Q. Is that straight ahead? Was the ship going straight ahead on the rudder?

A. Yes.

Q. When you threw her over she came to the extreme on that left [185] rudder?

A. No, I changed from ten right to ten left.

Q. Only throwing her ten degrees over instead of 35?

A. Yes.

Q. In other words, you would have 25 more on that left rudder if you put it over full?

A. Yes.

Mr. LILLICK: Q. Upon getting the ten left and ten right,—We are on 350 now. Your order comes to left rudder. You come from 350 then, with your standard 15 degrees to the left: Is that right?

Miss PHILLIPS: You are misstating the testimony of the witness again.

The COURT: Q. You were going 10 degrees to the right at the time you got your first order for a left rudder?

(Testimony of Julius Karl Deming.)

A. Yes, the rudder is 10 degrees to the right. I was checking my course.

Q. You were only ten degrees to the right?

A. I was ten degrees to the right.

Q. In other words, the rudder was so fixed that it was forcing the ship ten degrees to the right?

A. Yes.

Q. It was not an absolutely straight rudder?

A. No.

Q. So that when you went over you only got 10 on the other side?

A. Yes.

Q. And you still had 25?

A. Yes.

Mr. LILLICK: Q. You spoke of the gyro compasses, Mr. Deming. Was that in operation when you went on at 8 o'clock?

A. Yes.

Q. Who takes the readings from that, who enters them in the log?

A. The quartermaster.

Q. Where was he that morning?

A. He was on the bridge I suppose, I don't know.

Q. The gyro compass is situated where from the compass that you use in steering?

A. About that far away.

Miss PHILLIPS: May the record show how far the witness pointed?

The COURT: That is about three feet, at an angle of 45 degrees from you?

A. Yes. [186]

(Testimony of Julius Karl Deming.)

Miss PHILLIPS: Q. How many feet?

The COURT: He said three feet.

Mr. LILLICK: Q. Do you know anything about those records?

A. No.

Q. You had nothing to do with them?

A. No.

Q. Your only duty was to stay at the rudder and obey the orders that were given to you with respect to the change in the course?

A. Yes.

#### Redirect Examination

Miss PHILLIPS: Q. When you were steering a steady course where was your rudder?

A. Mostly amidships.

Q. Let us illustrate from this model, that is what we got this model for. This is the rudder is it not?

A. Yes.

Q. When you are steering a steady course, your rudder is supposed to be amidships?

A. Well no, it is not supposed to be amidships; it is wherever I leave it to stay on the course.

Q. When you speak about steadying on the course do you mean as you steer with the motion of the ship you are shifting your helm slightly first one side and then on the other?

A. Yes.

Q. So as to keep the ship on a steady course?

A. Yes.

(Testimony of Julius Karl Deming.)

Q. When you get an order "Come left 30 degrees" or "Ten degrees left", what is the angle of the rudder you are going to use?

A. The order would not be like that.

Q. All right, you tell me how it would be.

A. He would say left, he would say that first, and I would start going left, and then he would tell me what the new course would be. That is the way it is.

Q. What rudder change do you use when no other is specified, what is the rudder?

A. Fifteen degrees.

Q. Then that morning instead of having the order "New course 330 degrees", suppose the officer of the deck or the captain had said "New course 300 degrees", what degree of rudder would you have used?

A. Fifteen.

Q. Suppose he had said "New course 250 degrees", what rudder would [187] you have used?

A. We would have used 15 degrees.

Q. Then would you keep the ship on that rudder until it had come to the new course?

A. No.

Q. How would you do it?

A. According to how fast the ship swung, sometimes they swing faster than others. You have to judge that, and by being a helmsman you know— if you make a big change and come within 20 degrees, you keep slacking off.

Q. When you say that you had come to 328 degrees or 327 or 329 or whatever it was, you said you had a 10-degree right rudder?

A. Yes.

Q. What did you mean by that?

A. Well, I came to 335, and she swung a little faster than what I judges, so I had to put on ten degrees right rudder so she would not come too far by.

Q. And when you had ten degrees right rudder you got this other order?

A. Yes.

Miss PHILLIPS: That is all.

#### Recross Examination

Mr. LILLICK: Q. There was no one overseeing you while you were doing that?

A. No.

Q. You are in sole control of that rudder?

A. Yes.

Q. Without anyone checking upon the compass courses that you are making?

A. Yes.

Q. So you, on that morning, after having received these orders, used your own judgment as to how you should operate the rudder in order to finally get on the course of 330?

A. Yes.

Mr. LILLICK: That is all.

#### Further Redirect Examination

Miss PHILLIPS: Q. Can anyone see the compass besides yourself?

A. Not unless they were standing in back of me.

Q. If somebody stood back of you or near you, could they see the compass?

A. They would have to be right in back of me.

Q. But they could see it from that position?

A. Yes.

(Testimony of Julius Karl Deming.)

Q. But they could see it from that position?

A. Yes.

Mr. LILLICK: Q. Was there anyone over you that morning watching the course?

A. No.

Q. You were there all alone and you were the one responsible for whatever was done with the rudder?

A. Yes. [188]

Miss PHILLIPS: Q. Where were your eyes when you were handling this helm?

A. I had to watch the gyro repeater and it is off on my right.

Q. Did you turn your head to look about it?

A. No, not until after possibly three seconds after the collision.

Miss PHILLIPS: That is all.

Mr. LILLICK: That is all. [189]

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ROBERT O. MINTER,

Called for the United States; sworn.

Miss PHILLIPS: Q. Will you give your full name?

A. Robert O. Minter.

Q. What is your occupation?

A. Lieutenant in the United States Navy.

Q. How long have you been in the Navy?

A. I have been in the Navy about fourteen years altogether.

Q. Are you a graduate of Annapolis?

A. I am.

(Testimony of Robert O. Minter.)

Q. Have you had any other professional training?

A. I received a Master of Science Degree from the Massachusetts Institute of Technology, at Cambridge, Massachusetts.

Q. Will you state briefly what ships you have served on as an officer and in what capacity?

A. I first served on board the U. S. "New York" under engineering instruction, on board the U. S. "Barker" as first lieutenant and deck officer; on board the U. S. "Hannibal" as deck officer and survey officer; on board the U. S. "Childs" as engineering officer; on board the U. S. "Chicago" as scouting force aerological officer and deck watch officer.

Q. How long were you attached to the "Chicago"?

A. I was attached to the "Chicago" about a year and four months.

Q. Are you attached to it now?

A. I am not.

Q. What ship are you now attached to?

A. The U. S. "Northampton."

Q. In what capacity?

A. Scouting force, aerological officer and deck officer.

Q. Were you on the "Chicago" at the time of the collision?

A. I was.

Q. Did you see the collision?

A. Yes.

(Testimony of Robert O. Minter.)

Q. Were you on duty at the time of the collision?

A. I was the officer of the deck.

Q. Where were you stationed?

A. In the pilot house.

Q. Will you state your duties as officer of the deck?

A. In charge [190] of the ship subject to the direct orders of the commanding officer.

Q. What time did you go to the bridge?

A. About 7:45 in the morning of the 24th of October.

Q. Upon assuming your station as officer of the deck will you tell the Court what you did?

A. I received from the officer of the deck whom I was to relieve all of the pertinent information regarding the ship's position, speed, course, the watch that was on duty, receiving a report that the watch had been relieved, properly instructed and stationed.

Q. Where did you then take your position?

A. I stood in the forward part of the pilot house by the forward window.

Q. Did you have occasion to look at what compass heading the ship had?

A. I did.

Q. About what time was that?

A. Just as soon as I relieved the watch.

Q. What was her compass heading at that time?

A. 324 true and gyro.

Q. Was there any change of heading made after that?

(Testimony of Robert O. Minter.)

A. Yes, at 7:50 a change was made to 350 true and gyro.

Q. Did you look at the compass heading yourself?

A. Yes.

Q. Will you state whether or not she was on that course?

A. She was.

Q. You say you saw the collision. I want you to go ahead and tell the Court what you know of the circumstances and events shortly preceding the collision, and up to the time immediately following the collision. Just tell us all you know, and heard, and saw, and did.

A. About eight o'clock the bow lookout reported to the bridge that they had heard a fog signal on the starboard bow. I made this report by messenger to the captain; the captain came in the pilot house and ordered "Slow two thirds"; that was followed by an order of "Stop." About this time a ship was sighted about two points on the starboard bow, heading in approximately the same [191] direction as the "Chicago" was, but on a slightly diverging course. The next order was "Ahead two-thirds speed." That was followed by "Left rudder, come 20 degrees left." At this time I instructed the helmsman that his new course would be 330 degrees true; and then the next order was "Ahead standard speed." Just as we had steadied on the course 330 degrees true the bow lookout reported sighting a ship on the port bow. At the same time this report

(Testimony of Robert O. Minter.)

was made by the bow lookout a ship was sighted from the bridge two points on the port bow. When this ship was sighted it looked more or less like a blur, it had a white spot on it, and no doubt this white spot was the bow wave. As soon as it was determined, the outline could be made out of the ship, it could be seen that she was heading what appeared to me to be, heading directly for the bridge. The order was given "Left full rudder," followed immediately by "Right full rudder, emergency full speed astern." The engines were put emergency full speed astern, three blasts given on the whistle, three short blasts given on the whistle, a general alarm was sounded and one blast given on the siren. The ship that was sighted on the port bow continued to come, as it seemed to me, on the same course until just prior to striking the "Chicago," when it had a tendency to port. The ship that I was talking about as sighted on the port bow later turned out to be the "Silver Palm." It struck the "Chicago" on the port bow at an angle of about 35 to 45 degrees, at frame No. 21. This occurred approximately at 8:07. The ships struck, there did not seem to be any terrific jolt when they first struck, but it continued in and hit No. 1 turret and then the jolt was felt. The "Chicago" was heeled to starboard, and it also slewed her around to starboard, and then the ships parted and paralleled one another under practically the same heading.

Q. Coming back to a little more detail of the events that you have [192] just related, you said

(Testimony of Robert O. Minter.)

that the course of the "Chicago" at shortly before eight o'clock was 350 degrees true. Was there any change made in that course between the time you noticed her heading and the time you noted a steamer on your own starboard bow—let us call that steamer on your starboard bow the "Albion Star."

A. Up until I sighted the steamer?

Q. Yes.

A. There was no change of course made.

Q. There was no change of course?

A. No change of course.

Q. You say that about eight o'clock you notified the captain of this signal being heard. How do you relate that in point of time to the hour of eight o'clock? What fixes it in your mind, if anything?

A. Well, it is customary to report eight o'clock to the captain, at approximately two minutes of eight, and I had sent my messenger to report eight o'clock to the captain, and also to the admiral, before the report of this ship on the starboard bow was made to me, and the messenger had returned to the bridge.

Q. Had eight bells struck?

A. I do not think eight bells had struck.

Q. It had not?

A. I do not think it had.

Q. What approximate distance did you say the "Albion Star" was, could you estimate her distance from you where you sighted her?

A. I estimated 1000 yards.

(Testimony of Robert O. Minter.)

Q. The "Albion Star"?

A. The "Albion Star."

Q. What was the first order the captain gave when you sent word to him of this signal being heard?

A. "Slow two-thirds speed."

Q. Had the "Albion Star" been sighted at that time?

A. No, the "Albion Star" had not been sighted.

Q. What was the next order?

A. "Stop."

Q. How much time elapsed between the two-thirds and stop order?

A. It was only a matter of seconds.

Q. How soon after that did you see the "Albion Star"?

A. I think [193] it must have been approximately about the same time that the stop order was given.

Q. Did she stay in your view, or did the fog hide it, or how was it?

A. As I remember, she turned to starboard and went back in the fog bank.

Q. Did you see her again?

A. I did not.

Q. Mr. Minter, when the "Chicago" got the order "Stop," do you know whether the engines slowed or stopped?

A. Do I know what?

Q. Whether the engines stopped?

(Testimony of Robert O. Minter.)

A. You are speaking of when he slowed for the "Albion Star"?

Q. Yes.

A. Yes, I know they slowed.

Q. How do you know?

A. Well, when the next order was given "Two-thirds speed," and upon that he gave "Standard speed," the revolutions for standard speed we were going at eight o'clock was 173 revolutions, and after he had given the "Two-thirds ahead" order I was looking if the revolution indicator on the bridge had reached 120, and I never saw it reach it.

Q. You say it never reached it?

A. 120 revolutions, that is as he went ahead.

Q. Let us get that in point of time to the subsequent events. How long before you sighted the "Silver Palm" did you look at the engine-room indicator on the bridge?

A. I do not think I could estimate that time, because I don't just remember when it was, but I know it was after the two-thirds order was given, "Two-thirds ahead" order.

Q. How soon after the standard order was given was the "Silver Palm" sighted, could you estimate that?

A. No, it must have been a very short time, because we were coming left about the same time, we had not reached our new course 330.

Q. You did not steady on the course when you saw the "Silver Palm"?

A. No. [194]

(Testimony of Robert O. Minter.)

Q. Mr. Minter, can you tell me what course the "Chicago" was on when the "Silver Palm" was sighted?

A. As I remember it it must have been between 329 and 330.

Q. How do you know that?

A. Because I was watching the helmsman try to steady on the course.

Q. Do you mean you looked at the compass, yourself?

A. I always watch the compass in changing a course.

Q. Now, going back to your first view of the "Silver Palm," let us have a mental picture of what you saw, when you saw the "Silver Palm" on your first sighting of her?

A. To me it looked nothing more than a blur in the fog, I would say it was a fog bank she was in, and this blur was a white spot which evidently was a bow wave.

Q. How soon after that did you make out the ship?

A. That would be very hard to estimate it was a matter I think of seconds.

Q. When you saw the ship what did you see?

A. We could see mostly bows on. I did not look at her masts, but you could tell she was bows on.

Q. I am not familiar with your description there. You say you saw her bows on?

A. I mean you could see approximately as much of her port side as you could see of her starboard side.

(Testimony of Robert O. Minter.)

Q. What did you estimate her bearing with respect to your ship?

A. She was two points on the port bow, that would be about  $22\frac{1}{2}$  degrees from our heading. That would put her on a course of approximately 130 degrees true.

Q. I want you to give again the captain's orders to the helm and to the engines, without disrespect to Captain Keys, I would like to have you mimic for the Court just exactly what he said, and in what way he said it, as far as you remember?

A. At what time was that?

Q. After sighting the "Silver Palm." We do not expect you to [195] be accurate, but give us the reproduction of voice and manner, and what he said, and the interval particularly.

A. "Left full rudder, no, no, right full rudder, stop, emergency, full speed astern."

Q. Do you know whether the engines were put astern?

A. They were bound to be put astern.

Q. How do you know?

A. The engines were put astern, I know that, because the telegraph was put on astern, and they received the signal back that the order was received in the engine-room. The ship shook as it always does when it is backing, particularly when it is backing full. Also, immediately after the collision the astern wake of the propellers passed the bow immediately after the collision.

(Testimony of Robert O. Minter.)

Q. When you speak about the astern wake of the propeller, give us a little more in detail what you mean by that.

A. Well, when propellers go astern they cause the water to move forward, and as this water moves forward it churns up the water all along the side of the ship, and you can see as it progresses forward, or you can back into it; it had a tendency to discolor the water and churn it up, and there was no possible means of being mistaken.

Q. At what time did you glance at the "Chicago's" propeller water?

A. I think it was immediately after the collision occurred.

Q. Where did you see the propeller water then?

A. I saw it past the bow.

Q. Mr. Minter, you have spoken about the "Silver Palm's" course. Did you observe any apparent change of course on the part of the "Silver Palm"?

A. As I previously stated, she seemed to have a tendency to turn to port just prior to the collision. That is the impression I got from it.

Q. What would you say the "Chicago's" speed was at the moment of collision?

A. I estimated it to be just short of dead in the [196] water, when I say "just short" I mean perhaps we had slight headway, if any.

Q. When you first saw the "Silver Palm" did you make any estimate of what her speed was?

A. I do not think at the time I did. I have

(Testimony of Robert O. Minter.)

thought back over the situation, and I have estimated it since then.

Q. But you did not estimate it at that time?

A. I did not estimate it.

Q. Can you tell us exactly how far the "Silver Palm" was from the "Chicago" at the moment you sighted her?

A. I could only estimate it.

Q. Did you make an estimate at the time?

A. I did.

Q. What did you estimate that the distance was at the time?

A. 700 yards.

Q. Did you make any estimate of the "Chicago's" speed at the time you sighted the "Silver Palm"?

A. I think I also estimated that since the collision.

Q. But you did not at the time?

A. The only thing I recall having done, I estimated, as I said before once, I glanced at the revolution indicator and I saw at that time that the revolutions of the indicator had not reached 120, and that was not just prior to the collision.

Q. You say it had not reached 120?

A. Yes.

Q. How far short of 120 did it reach?

A. I do not recall, because I was looking for 120, because at two-thirds speed, which would give us 12 knots, it would have been 120, and I was looking for it to pass it, and it did not.

(Testimony of Robert O. Minter.)

Q. You cannot give us any idea of how far short of 120 the revolutions had come?

A. No, I could not.

Q. Mr. Minter, have you any recollection of looking over the "Chicago's" side to determine or get an estimate of her speed?

A. At what time is this?

Q. At any time. [197]

A. Yes. I would not say I exactly looked over the side, because I could only see the water from either the port bow or starboard bow, where I was located. I was in the pilot house. You could get an estimate by looking over the side from where I was standing, but that would not mean I went over to the starboard side of the ship and looked at the water, which I did not do.

Q. You say you did look over the side of the bow. What did you do?

A. Is that at any time?

Q. At any time, yes.

A. The only time I recall making an estimate by looking over the side was just before the collision occurred, and that is what I based my answer on a few minutes ago that she was just short of dead in the water, because she did not seem to be cutting water.

Q. She did not seem to be cutting water?

A. No.

Q. Mr. Minter, you said you did not estimate at the time what the "Chicago" was making, but you said you made an estimate since.

A. Yes.

(Testimony of Robert O. Minter.)

Q. What is your estimate based on?

A. Well, I have made a drawing of what I thought the situation was in my mind.

Q. You mean the situation as you recall it, or what?

A. As I recall it, yes. That is, I have made a drawing of just what I thought both ships had done from the way I saw them, and knowing approximately, knowing the acceleration or deceleration of the "Chicago," from my knowledge I would estimate from that that she was going about a little less than ten knots at the time the "Silver Palm" was sighted.

Q. Did you hear any fog signals that morning?

A. Yes.

Q. Tell us about those.

A. When I went on watch there were several cruisers astern of us, and we could hear those, we heard the "Albion Star," on the starboard bow. I also heard the "Chicago" making a reply to fog signals, itself. [198]

Q. Did you hear any signals from the "Silver Palm"?

A. None until after the collision.

Q. Not until after the collision?

A. No.

Q. Going back to that matter of the propeller water, can you estimate when a ship gets stern way from the propeller water?

A. Yes, you can estimate very close, I think, provided you have had enough experience.

(Testimony of Robert O. Minter.)

Q. How?

A. Well, by handling a ship or watching a ship being handled I should say you can get marks on different prominent objects at times when she starts astern, and if you watch the propeller wash at the same time you can see how far the propeller water advances up the ship.

Q. Do you feel yourself competent to say when the propeller wash reaches when the "Chicago" starts astern?

A. Well, I watched it very closely during the time I have been on the "Chicago," and I have heard the opinion of people that are competent to express opinion.

Mr. LILLICK: The witness should not give an estimate because of the opinion which he has heard of others competent to say.

Miss PHILLIPS: I know that, and I am not asking that.

A. I will give it a little more fully. My duty as an aerological officer requires me to be on the bridge when aeroplanes are handled; in other words, when you catapult aeroplanes or aeroplanes are picked up, and during those times, particularly in picking up aeroplanes, there is always an occasion for backing full speed, and I am also situated that I can watch it closely, because I have to be there to get the wind conditions, to give the different people in charge all those details. That all happens before the aeroplanes are picked up. I stay around where I can observe those things very closely, and

have seen numerous times when this operation had been performed, and I have estimated approximately the wash of the propeller water when the ship starts astern. [199]

Q. That is exactly what I want, your judgment on it.

A. The propeller water reaches a point when a ship starts astern I would say approximately the break of the bridge, that is, the after part of the bridge.

Q. I wish you would point out on this model the position of the propellers.

A. There is one propeller here, and one right here.

Q. Let me see where that is.

A. That is inboard on the port side.

Q. That is a little aft of the after gun turret, is it not?

A. It is about one-third the distance of the gun turret to the stern.

Q. And the other propeller is where, approximately?

A. Abreast of the after turret.

Q. Now, let us take up the ship at the point where you say that was—did you say abreast of the bridge? I did not quite get your description.

A. The break of the bridge, that would be here.

Q. You are pointing now to a point almost in line with the foremast, aren't you?

A. The after leg of the tripod of the foremast.

Q. When you speak about handling aeroplanes, Mr. Minter, what was the speed of the "Chicago" then?

(Testimony of Robert O. Minter.)

A. 15 knots.

Q. What particular duty have you, if any, when the captain gives an order—have you any duties with respect to that order of the captain?

A. My duty is to see that that order is accurately and efficiently carried out, to the best of my ability.

Q. Turning your mind back to the events of that morning, will you state whether or not the orders of the captain were executed efficiently and promptly, or inefficiently and tardily, or any other way?

A. I would say that the orders were issued efficiently, there was no hesitation, and there were no mistakes in the maneuvering, whatsoever.

Q. Not about the issuance of the orders, but about the obeying [200] of the orders.

A. I was speaking about the execution of the orders.

Q. You said at the time you made no estimate of the speed of the "Silver Palm." Have you made any since then?

A. Yes, I have.

Q. What have you estimated her speed to be?

A. I have estimated she was making 9½.

Q. At the time you sighted her or when?

A. At the time she hit.

Q. Did you make any estimate of the speed at the time you sighted her?

The COURT: 9½ knots?

(Testimony of Robert O. Minter.)

A. 9½ knots.

Miss PHILLIPS: Q. At the time you sighted her, have you any estimate of that?

A. She seemed to be, as I look back on it, she seemed to me to have approximately the same speed.

Miss PHILLIPS: That is all.

Cross Examination.

Mr. LILLICK: Q. Mr. Minter, when you went on the bridge at 7:45 that morning, you looked about the horizon as well as about the bridge, didn't you?

A. I did.

Q. And what was the condition then with respect to fog: Were you in clear weather or in fog?

A. I would say we were in clearing weather.

Q. On your mast where the lookout was stationed it was in fog, was it not?

A. I do not understand which lookout you are speaking of.

Q. You had a lookout, did you not, in the fore-top?

A. Yes, we did.

Q. Was it not foggy about your foretop?

A. It was scattering clouds, the same as it was lower down.

Q. It was not only on the surface of the water?

A. It was broken, I would call that broken clouds, I do not call that fog.

Q. You distinguish, then, between clouds and fog?

A. Yes, very distinctly.

(Testimony of Robert O. Minter.)

Q. I know you are an expert on that subject, and know so much more [201] about it than I, I will have to ask you some questions and have you enlighten me. Fog, then, is only the mist in the atmosphere a sufficient distance from the sea or the earth?

A. Well, now, I will try to explain what I know about it. People speak of fog as low fog and high fog, laymen. We speak of fog and low stratus clouds. I would have called any condensation formed around the foremast low stratus clouds.

Q. So that if the lookout on the foretop said that he was in a fog you would say that he was in clouds because he was 140 feet above the fog?

A. I would.

Q. Now, as to clouds or fog, you would not distinguish between a so-called fog bank and a cloud, would you?

A. Yes, I would distinguish between a fog bank and a cloud.

Q. Our testimony here is that the "Silver Palm" came out of a fog bank on the port bow of the "Chicago" some 700 or 800 yards away, or a mile and a half away.

Miss PHILLIPS: Just a minute, I do not believe you should state that. I think the words "fog patch" and "fog bank" were used so constantly that neither of us could say which term was used.

Mr. LILLICK: Then let us put it this way—

Miss PHILLIPS: I would rather have the witness say. He was there and saw.

(Testimony of Robert O. Minter.)

Mr. LILLICK: I will reframe the question. We have had testimony that the "Silver Palm" came out from a fog bank or a fog patch two points off the port bow of the "Chicago," and at distances given differently by different witnesses. You saw her come out of the fog bank, did you?

A. When I saw her she was not out of the fog bank.

The COURT: Why do you say 1½ miles?

Mr. LILLICK: Some of the witnesses have said 700 to 800 yards and some two miles. [202]

The COURT: Not before the Court.

Mr. LILLICK: 700 or 800 yards has been testified to several times.

The COURT: 700 or 800 yards has been testified to by the admiral and the captain, but 1½ miles has never been testified to.

Miss PHILLIPS: Nobody has said a mile and a half.

The COURT: I have not heard any testimony in court to that effect, because I have been keeping notes on it.

Mr. LILLICK: Let me reframe the question.

Q. We have heard testimony that the "Silver Palm" was coming out of a fog bank or fog patch two points off the port bow of the "Chicago." What is your definition of that fog, a bank or a patch?

A. I would say that it was a scattering fog bank.

Q. How long did that extend over the horizon?

A. That is something I could not say.

(Testimony of Robert O. Minter.)

Q. Did it run from directly ahead of the "Chicago" over toward her port beam, would you say?

A. Are you speaking now of this one particular fog bank, or about the fog bank that existed at the time?

Q. What I am trying to put into the record is the type of fog bank from which the "Silver Palm" came, and a definition of that, whether it was a fog patch or a fog bank.

A. Well, that is something I could not answer.

Q. Was there fog directly ahead of the "Chicago"?

A. Some.

Q. How far away?

A. I would estimate it about 1500 yards or more.

Q. And the fog that was on the starboard bow, from which you saw the "Albion Star" emerge, how far was that away?

A. Well, I would say that was approximately around a thousand yards.

Q. And the fog from which the "Silver Palm" came two points off your port bow was how far away?

A. I would estimate that to be 700 yards. [203]

Q. Over further toward your port beam was the fog closest?

A. What particular time are you speaking of now?

Q. At the time the "Silver Palm" was first observed.

(Testimony of Robert O. Minter.)

A. I could only estimate it now. I don't remember, as I made an estimate at the time. I imagine it was about 700 or 800 yards.

Q. So the fog was thicker on the port side than on the starboard side of the "Chicago"?

A. I am basing my opinion on several things. My estimates are based on what I could see and it is a known fact that visibility varies according to the lighting effects, namely, that at times the sun shining on a fog bank has its rays refracted in such a way that perhaps you would not be able to see as far as at other times. Other times it may be scattered and you see farther than you do at other times.

Q. Going back to what you, yourself, saw, which was at approximately eight o'clock in the morning, was the sun shining from aft, from your starboard quarter, or from your port quarter that morning?

A. I think the sun should have been shining approximately on the beam.

Q. On the beam, from east?

A. Yes.

Q. How did that lighting effect that morning affect visibility with respect to the fog on your port side and the fog on your starboard side, could you tell us?

A. I could not tell you. I could tell you what in my opinion it is.

Q. Will you give me your opinion?

A. My opinion is perhaps you would not be able to see as far on your port hand as on your starboard hand.

(Testimony of Robert O. Minter.)

Q. In addition to that, as I understand your testimony, the fog on the port side of the "Chicago" was closer to the "Chicago" than the fog on the starboard?

A. In addition to that I had to take into consideration, when I testified that the fog was 700 yards on the port hand, I had to consider the fact that perhaps [204] I could not see as far on the port hand as on the starboard hand, due to the lighting effects.

Q. Then give me your estimate of on which side your visibility was greater, on the port side or on the starboard side?

A. I would say it was greater on the starboard side.

Q. Did you hear the first whistle from the "Albion Star" that was reported by the lookout?

A. I did not.

Q. How many reports from the lookout with respect to signals from the "Albion Star" did you receive before you heard a signal from her?

A. How many reports from the bow I got?

Q. Yes.

A. I think it was two, because the second, after he reported the first time he made a motion with his hand, in what direction he was hearing it.

Q. You did not hear that one?

A. Well, I could not tell how many he heard.

Q. But the one he reported is the one that you did not hear?

(Testimony of Robert O. Minter.)

A. I don't know how many I missed, that is what I could not tell you.

Q. But after that one that he reported, not having heard that, he reported another which you did not hear, is that right?

A. No, as I say I don't know how many he had heard. He pointed after he made a report, he was pointing in the direction in which he heard it, or was hearing it, I don't know which.

Q. You don't know how many he heard. He made one report, in other words, that he heard a fog signal?

A. Yes, that was all that was necessary for him to report.

Q. How long after that was it until you heard the first fog signal that you heard from the "Albion Star"?

A. It was only a matter of, say, four or five seconds, or maybe six, I don't know just how long it was. I would not say it was over six seconds at the most.

Q. And in what direction did the lookout point?

A. He pointed on [205] the starboard bow about two points, I think it was, or approximately that, maybe three.

Q. Did you send the messenger to the captain after the first report from the lookout?

A. Immediately the report was made to me I notified the captain by messenger.

Q. And in reference to the whistle that you heard some four or six seconds later, where was the captain at the time you heard that whistle?

(Testimony of Robert O. Minter.)

A. Well, that is hard for me to say. I do not just remember whether he came in as I was hearing the signal or not, but if he was not there he was shortly afterward.

Q. Did you hear him give the order two-thirds speed?

A. Yes.

Q. And in relation to that order when was it that you had heard the first whistle?

A. Well, it was only a matter of a few seconds, as he walked on the bridge he gave the order to go two-thirds.

Q. Then the order Stop came after you had heard another whistle?

A. The captain had hardly got from the door leading into the pilot house to the forward part of the pilot house before he gave Stop.

Q. As officer of the deck, are you in command of the navigation of the ship from the bridge up to the time the captain steps on the bridge?

A. The officer of the deck is responsible for the handling of the ship, but he cannot change course nor speed when the captain is on the bridge without his permission.

The COURT: Q. When the captain is on the bridge?

A. Yes.

Q. What happens when the captain is not on the bridge?

A. The officer of the deck changes course in an emergency.

(Testimony of Robert O. Minter.)

Mr. LILLICK: Q. When the lookout reported the whistle from the "Albion Star," which you did not hear, you waited, having sent the messenger to the captain, before any change was made in the speed of the Chicago?

A. The captain was on the bridge. The chart house is part of the bridge. [206]

Q. In other words, the captain being in the charthouse, it was, under your regulations, the duty of the captain to take care of the speed instead of your duty?

A. Sure it is my duty, if the captain is on the bridge, it is my duty to obtain his permission before I change course or speed; either course or speed.

Q. And being on the bridge, or in the pilot-house, going through fog, and hearing a whistle forward of your beam, you cannot stop your vessel without obtaining permission of the captain?

A. I can in an emergency, yes.

Q. Then in your opinion, it was not an emergency that morning with reference to the "Albion Star"?

A. Certainly it was not an emergency.

Q. But you did not stop the vessel when you heard the vessel forward of your beam, you waited until you had sent a messenger to the captain before the Chicago's speed was changed: Is that right?

A. I sent a messenger to report to the captain that a signal has been heard on the starboard bow. If the captain had not been there when I heard the

(Testimony of Robert O. Minter.)

signal on the bridge, the engines would have been stopped.

Q. But instead of that the captain ordered the engines at two-thirds speed and subsequently ordered them stopped?

A. Yes, in a matter of seconds.

Q. There was a record kept in the engine room as well as in the pilothouse, was there not, Mr. Minter, of the times when the orders were executed?

A. I imagine there was; in fact I know there was.

Q. Was there any difference between the density of the fog or the fog patches from the time you came on watch at 7:45 and up to the time the first whistle was heard from the "Albion Star"?

A. You mean to speak of the density of the fog patches?

Q. Would you tell me from your observation what the situation was [207] with respect to fog during that time?

A. Well, considering it in a general way, I would say the density was slightly less as the watch progressed up until eight o'clock.

Q. In other words, you were coming out of a more dense fog into a clearing area?

A. I do not like the words "more dense," because there is a very fine point there. I would say it was better in the direction in which we were going, yes.

Q. The fog was in patches at 7:45?

A. It was.

(Testimony of Robert O. Minter.)

Q. But yet with the patches more close than they later were at eight o'clock—would you say that?

A. In some directions I would say yes, and in other directions I would say no.

Q. From 7:45 to eight o'clock did the Chicago at any time go through one of these fog banks or fog patches?

A. I do not recall that it did.

Q. As I understand you, you distinguish between a cloud that would be as low as your foretop lookout's position and fog on the water?

A. I do, yes.

Q. And if your foretop lookout during all of that time was in a situation where he could not see objects at any distance from the vessel you would say he was in clouds rather than in fog?

A. I would at that time, yes.

Q. Were the whistles of the "Chicago" being blown as fog signals regularly between 7:45 and 8?

A. They were.

Q. So that from the standpoint of operating a vessel at sea under the International Rules, she was proceeding through fog, requiring her to blow fog signals: Is that true?

A. I would say she was blowing fog signals due to the reduced visibility during the period of which you are speaking.

The COURT: Not actually because you were in fog, but because of reduced visibility he was blowing fog signals?

(Testimony of Robert O. Minter.)

A. Or to be on the safe side he blew them. [208]

Mr. LILLICK: Q. You operated the "Chicago" according to the International Rules at sea, did you not?

A. As far as I know it was operated that way.

Q. You know Rule 16, do you, of the International Rules?

A. I do not know as I can recall it by number.

Q. The language is something like this, in a fog, mist, falling snow or rain—this is not exactly—a vessel shall proceed at moderate speed, having regard to existing circumstances—approximately that meaning.

A. I believe it mentions reduced visibility.

Q. You may be correct, I don't remember that. In any event, it was in accordance with that rule that you were blowing the fog signals on the "Chicago" that morning?

A. Yes.

Q. Can you tell me from recollection how long it was between the order of Stop that followed Two-thirds speed and the order to change course 20 degrees left?

A. How long it was between two-thirds and what?

Q. Between the order to stop that followed two-thirds and the order to change course 20 degrees left.

A. The only time I can give you that, I think it came right after the order two-thirds.

(Testimony of Robert O. Minter.)

Q. Then it was between the order Ahead two-thirds and Stop?

A. No, Ahead two-thirds and Standard.

Q. My recollection is that after the "Albion Star's" signal the captain ordered two-thirds speed and then, as you put it, almost immediately afterwards ordered Stop.

A. Yes.

Q. Now, starting from that stop signal, how long was it until the captain ordered left 20 degrees?

A. He ordered Ahead two-thirds, I think he ordered left rudder, come 20 degrees, and then Standard ahead. How much time was between there is hard for me to estimate.

Q. Then the sequence of the orders was Two-thirds speed Stop [209] and Two-thirds speed, Standard speed, is that right?

A. Two-thirds speed, Left rudder, Come 20 degrees, Standard speed, as I remember it.

Q. Then to repeat them, the orders were Two-thirds speed, Stop, Two-thirds speed, Left rudder, Change course to 330, Standard speed. Is that the order?

A. Yes.

Q. How long was it, have you no recollection at all, from the first Two-thirds speed up to the time of the change of course order of Left rudder, 330 degrees? The change of course was made, as I understand, between Two-thirds speed and Standard?

A. Yes.

(Testimony of Robert O. Minter.)

Q. The change of course came between those two?

A. Yes.

Q. Will you tell me how long elapsed, what time elapsed from the first two-thirds speed up to the change of course?

A. It would be approximately two and a half or three minutes.

Q. And the Two-thirds speed when the "Albion Star" was the cause of it was given at what time, do you know?

A. I could only give it approximately, I don't remember it.

Q. I want your best impression.

A. I would say it was approximately at eight o'clock it was given.

Q. At approximately eight o'clock?

A. Yes.

Q. Then you would say it was two and a half minutes after that that the order left rudder, 330 degrees, was given.

A. After thinking of that it must have been at least three minutes.

Q. Following that same sequence, the next order from standard speed was what?

A. The next order was Left full rudder.

Q. How long was that after Standard speed was ordered?

A. I could only estimate it. It would be about not even thirty seconds.

Q. Not even thirty seconds?

(Testimony of Robert O. Minter.)

A. No.

Q. And then following that in rapid succession, Right full rudder?

A. Right full rudder.

Q. Right full rudder?

A. Yes. [210]

Q. Emergency full speed astern?

A. Stop, emergency full speed astern.

Q. Did you hear the bow lookout report the "Silver Palm"?

A. That was reported to me through the telephone talker.

Q. You heard the "Silver Palm" reported through a telephone talker from the bow?

A. I heard a ship reported; it was not reported as the "Silver Palm".

Q. Tell me how the telephone is operated from the bow?

A. The telephone talker pushes a button down with his hand to talk, but you can listen at all times.

Q. To what is that connected from the bridge?

A. That is connected to another telephone; the man at the bow talks to a man on the bridge at the telephone talker.

Q. So that from the lookout on the bow the telephone report is made to the lookout on the bridge and the lookout on the bridge reports to the officer of the deck, or some one?

A. Reports it to the officer of the deck.

Q. How many were there on the bridge that morning when that report came from the bow look-

(Testimony of Robert O. Minter.)

out? Can you tell me who were on the bridge of the "Chicago"?

A. Yes; the captain, the navigator, myself, the helmsman, the bugler who was acting as the engine room telegraph operator, the telephone talker, sounder of fog signals, radio operator, the corporal of the guard, the boatswain's mate, the chief signal man, the captain's orderly, the port and starboard lookouts, officer of the deck's messenger. I think that is approximately all.

Mr. LILLICK: If your Honor please, I have quite a little more cross examination. (After discussion as to length of sessions)

The COURT: We will take an adjournment now until tomorrow morning at ten o'clock. [211]

(An adjournment was here taken until tomorrow, Thursday, March 15, 1934, at ten o'clock a.m.)

Filed June 19, 1934. [212]

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Friday, March 16, 1934.

ROBERT O. MINTER,  
Recalled.

Cross Examination Resumed.

Miss PHILLIPS: May I have the last question and answer read?

The COURT: Read the last question and answer.

(Record read by the reporter.)

Mr. LILLICK: Q. Mr. Minter, does the telephone talker on the bridge to whom the bow look-

(Testimony of Robert O. Minter.)

out telephoned the sighting of the "Silver Palm" receive reports also from the foretop lookout by telephone?

A. He does not.

Q. How did the foretop lookout communicate with the bridge?

A. By voice tube.

Q. How far is it from the bridge to the foretop where that lookout is stationed?

A. I would say it was approximately 140 feet.

Q. What is the distance, approximately from the foretop station to the deck?

A. I would say it would be about 170 feet.

Q. Will you give me the various locations to which the telephone talker on the bridge leads, or to which it is connected?

A. It is connected directly with the lookout on the bow; that same line is connected with various parts of the ship which, at that time, were not being used.

Q. You mean that they were disconnected, or simply not being used that morning?

A. Simply that during certain drills that line is used elsewhere, but this morning there was no drill, and no reason for the line being used—the other telephones connected to the line were not used.

The COURT: In other words, they were used for the firing drill and not used in connection with navigation?

A. Yes. It is connected with the gunnery drill, but this morning that was the only use that was

(Testimony of Robert O. Minter.)

being made as far as ship's drill is concerned. It is specially put out there during fog, it is not used at any other [213] time except perhaps when we are getting under way or coming to anchor.

Mr. LILLICK: Q. Then there would be but two lines, one to the bow and one to the stern, or only one line to the bow?

A. There was only one line to the bow this morning. I might add to that, this line is run at all times, and the system is built in the ship, but you have to connect portable telephones to the line, to jack boxes. It is located on the bow, the telephone connected to a jack box, this telephone system. The man on the bridge, the telephone talker, had a telephone connected to a jack box to this telephone line.

Q. Was there also a lookout at the stern that morning, do you know?

A. Not to my knowledge at this time—there was not, no.

Q. There was none?

A. No.

Q. At the bow were there two men, a lookout and a telephone talker beside him, or just a lookout?

A. The junior officer of the deck was acting as lookout. The telephone talker was beside him with a telephone on.

Q. So that the signal from the bow lookout went to the man at his side who had the telephone connection?

A. Yes, that is right.

(Testimony of Robert O. Minter.)

Q. Will you give me an estimate of how far you would have been able to see the "Silver Palm" that morning ahead of you or upon your port bow if the weather had been clear?

Miss PHILLIPS: I think that is speculative.

Mr. LILLICK: I am asking for the purpose of drawing a comparison between how far it would have been possible, and how far she actually was visible.

Miss PHILLIPS: I object to that as being speculative.

The COURT: If you want to go into this, of course it is to be assumed there is a certain clearness of the object, its color and distance, and there is a dependence upon certain factors. Do [214] you think you could estimate that?

A. Not knowing these things, I am certain I could not answer it.

Mr. LILLICK: Q. How far at sea in clear weather from the bridge of the "Chicago" could you see an ordinary freighter?

A. In order to answer your question I think I would have to specifically know what the degree of visibility was.

Q. I am specifically stating clear weather.

A. I understand that, but clear weather can mean that you have visibility from eight miles, say to 25 miles.

Q. Then, to put it at the lowest estimate, you would say eight miles in perfectly clear weather?

(Testimony of Robert O. Minter.)

A. I would say at 8 miles it could be in clear weather?

Q. When you first went to the bridge that morning at 7:45 you heard the fog signals of the cruisers that you had left behind you, did you not?

A. I did.

Q. Can you tell me how long after you went on watch you heard their fog signals?

A. As I remember it, I heard them up to shortly around 8 o'clock. I do not recall having heard them after that.

Q. I have not your recollection of the whistles from the "Chicago" after you sighted the "Albion Star". Can you, as well as you can recollect, give me the signals that were blown on the "Chicago" after you sighted the "Albion Star"?

A. That is up until what time do you wish them?

Q. Up to the time of the collision?

A. In the order, then, that we were giving regular fog signals, proceeding ahead, we continued to give regular fog signals from that time until the emergency full speed astern was given, when we gave three short blasts on the whistle, and following that the siren was blown as a signal to close their water-tight doors on the "Chicago".

Q. Do you remember whether a signal was heard from the "Silver [215] Palm" either before or after your three-blast signal?

A. That comes up to what time?

Q. Just before the collision when the "Chicago" blew the backing signal.

(Testimony of Robert O. Minter.)

A. I do not recall hearing any signals from the "Silver Palm" prior to the collision.

Q. When you were testifying the other day, Mr. Minter, you said that it seemed to you that the "Silver Palm" continued on the same course until just prior to the collision, when she seemed to have a tendency to come to port. Do you remember how far away from the "Chicago" the "Silver Palm" was when she changed her course?

A. She was not very far.

Q. From your recollection as best you can will you tell me what you estimated the distance was from the stem of the "Silver Palm" and the side of the "Chicago" when you noticed that change of course to port on the "Silver Palm"?

A. First I would like to clarify my last answer. I would like to say that I was not continuously watching the "Silver Palm" as she came toward us, for I had other duties to perform, but as I recall it now, as I glanced at her before she struck, I would say she was not a hundred yards away when I saw her swinging to port.

Q. By "not one hundred yards" I want to get the distance as accurately as possible, would you say it was between 75 and 100 yards?

A. I think that would be leeway enough, yes.

Q. In your opinion could that have been caused by the relative motion of the two vessels?

A. It no doubt could have been, yes.

Q. What was the duration of the fog signal blown on the "Chicago" that morning, and the intervals between them?

(Testimony of Robert O. Minter.)

A. That is what time?

Q. From the time the "Albion Star" was sighted up to the time of the collision?

A. We were blowing fog signals for four [216] seconds at intervals of a minute.

The COURT: Q. That is, one blast of four seconds?

A. One blast of four seconds, when going ahead.

Mr. LILLICK: Q. Is that the fog signal that the "Chicago" customarily uses?

A. That is the fog signal she used customarily when I was on watch.

Q. In distinguishing, as you do, the signal ordered when you were on watch, do you mean that on other watches on the "Chicago" other officers of the watch use a different signal?

A. I don't know what they use, I have never timed it.

Q. Whenever you are officer of the deck, the signal blown, or ordered to be blown by you in the fog, is a prolonged blast of four seconds, with an interval of not more than one minute between them?

A. I will change that; when I am on watch and under way, going ahead, in fog, the signals that are blown are of four to six seconds duration at intervals not greater than two minutes.

Q. And then on this morning, between the time you sighted the "Albion Star" and the collision you were blowing prolonged blasts of four seconds with intervals of not more than one minute?

A. That is right.

(Testimony of Robert O. Minter.)

The COURT: Is that a direct order, or is that understood when you are on duty?

A. I instruct the man that is handling the fog signal.

Q. You say "I want you to blow four seconds with intervals of a minute"?

A. With intervals of one minute.

Q. Did you give that order that morning?

A. I instructed the man that was blowing the whistle—we have two means of blowing fog signals, one is automatic and the other is by pulling the whistle lever. This morning we were using the lever and he was instructed to blow, and as he blew I would time it myself.

Q. You gave that order this morning?

A. Yes. [217]

Q. And he would blow four seconds, with a minute intervening, and would continue to until he was directed to cease?

A. Yes, told to do different.

Mr. LILLICK: Q. Do you remember whether you gave the sound of the fog signal that morning when you came on watch at 7:45?

A. He was instructed when I came on watch.

Q. At 7:45?

A. At 7:45.

Q. Do you remember whether, at the time you gave him that order of making a prolonged blast of four seconds with intervals of not more than one minute—

A. (Interrupting) Intervals of one minute.

(Testimony of Robert O. Minter.)

Q. Instead of your usual order of a prolonged blast of six seconds with intervals of not more than two minutes, for any particular reason?

Miss PHILLIPS: I think counsel is misstating the substance of the witness' testimony. He is distinguishing the four seconds' blast and the six seconds' blast. The witness said four to six seconds.

Mr. LILLICK: It is most likely I misunderstood the answer of the witness before.

The COURT: As I understand it, you said on other occasions, didn't you, that you sometimes gave four to six seconds, with intervals of from one to two minutes?

A. Not greater than two minutes.

Q. That was on other occasions you had done that?

A. I had.

Q. But on this occasion you gave, as you have stated several times, a four-seconds blast?

A. Four seconds.

Mr. LILLICK: Q. Do you remember whether there was any particular reason this morning for having changed the order with respect to the time the whistle should be blown and the intervals between?

A. Mr. Lillick, I have not changed—

The COURT: I don't think he said he changed, but the question [218] is, why he selected that.

Mr. LILLICK: Q. Put it that way, why you selected it that morning?

(Testimony of Robert O. Minter.)

A. There was no particular reason for selecting it. I think that four-second blasts with one minute intervals is within the international rules of the road.

Q. I agree with you?

A. I had no particular reason for selecting that particular interval.

The COURT: Q. What it amounts to, it was a shorter blast at more frequent intervals than you sometimes gave?

A. No, I think my testimony has been misinterpreted. I was merely stating a leeway which I had a privilege of, in having this man blow the signal. I selected it for no particular reason. I could have told him to blow six seconds in not greater than two minute intervals.

Q. But, as a matter of fact, you were giving shorter blasts at more frequent intervals on that morning, were you not?

A. Yes.

Mr. LILLICK: If I inadvertently ask a question that is not consistent with what you said, if you will just correct me I will appreciate it.

A. I will do the best I can.

Q. How far was the "Silver Palm" from the "Chicago" when the emergency full speed astern signal was sent down to the engine room from the bridge?

A. I think it would be 150 yards.

Q. What was the force of the wind that morning?

A. Do you want force or knots?

(Testimony of Robert O. Minter.)

Q. I would rather have it in knots.

A. Twelve knots.

Q. Twelve knots?

A. Yes.

Q. Was the wind blowing approximately from the same direction as the "Silver Palm" or on one side or the other? Could you give me that as best you remember it?

A. Was it in the direction in which she was coming?

Q. Yes.

A. The wind was west northwest; that would be 290. and [219] she was coming from approximately 310; she was heading approximately 130.

Q. We can compute that almost exactly, but is it fair to say that the wind was blowing from approximately the same direction from which the "Silver Palm" was coming?

A. I would qualify that by saying, about in the same general direction from which she was coming.

Q. With your knowledge of fog, and the action of wind upon fog as it was that morning, the fog patch or fog bank would not move as rapidly as the wind, would it?

A. You want my opinion on that?

Q. Yes.

A. I think that you would have to consider just how close the fog was on the water, you have to consider the turbulence of the wind, and you have to consider whether there is friction between the fog and water surface. The fog, as you know, can

(Testimony of Robert O. Minter.)

be approximately on the water and still not be touching it. Other times you might have it resting absolutely on the water surface, in which case it would not go as fast as the wind was blowing.

Q. Would it even go as fast the wind was blowing when the fog is off the water?

A. I doubt it, I do not think it would.

Q. Would you be willing to give me an estimate, from your observation of that fog that morning, and bearing in mind that the wind was blowing at 12 knots an hour, how fast that fog was moving?

A. I could not give it to you, I am sorry, because I have no means of estimating, because, as I recall, as I stated before, as I previously testified, I do not remember the "Chicago" passing through one of the fog patches, and that would be about the only way I would have of estimating how fast it was traveling, if any.

Q. Again using the word "approximately" would you say that the fog would have traveled approximately as fast as the wind, and let us leave a leeway of 20 per cent.

Miss PHILLIPS: Just a moment, I think the witness has been [220] asked that question in almost the same words and has answered it, and I object to it on the ground the question has been asked and answered.

Mr. LILLICK: On that ground I think that the objection of Miss Phillips is not good.

Miss PHILLIPS: I will rest on the ruling of the court.

(Testimony of Robert O. Minter.)

The COURT: Do you realize any difference between that question and the last one?

A. I think that I would have to answer approximately the same as I did on the other, on the ground, I have no means of basing an approximation.

Mr. LILLICK: Q. Would the course you were steering when the "Albion Star" was sighted, would the change of 20 degrees left point the "Chicago" in a direction more of this fog bank or fog patch in which the "Silver Palm" was, than her course before?

A. I would not care to answer because I had no bearing on the fog bank.

Mr. LILLICK: May I see the log book?

Miss PHILLIPS: Yes.

Mr. LILLICK: Q. Mr. Minter, I show you the log book that has been produced by the Government, and ask you to tell me where, if at all, your own writing appears with respect to the entries on the watch you stood on that morning from 7:45 until after the collision?

A. My own writing?

Q. It is all in your handwriting? I thought you said "my own handwriting."

A. No.

Q. Is any of it in your handwriting?

A. Yes, commencing with the 0812, this is my handwriting until this place down here.

Q. Might I ask you to do this, up to the time of the collision will you read to us the portion of that that is in your handwriting?

A. None of it.

(Testimony of Robert O. Minter.)

Q. I did not understand you. None of it is in your handwriting?

A. Up to the collision. You mean that I entered it before the collision? [221]

Q. I misunderstood you and you misunderstood me. I just asked you whether any of the entries were in your handwriting, and I understood you to say it was, but my question indicated that I asked prior to the collision. Whether prior to the collision or before the collision, will you read to me the entries on that date having to do with the collision that you wrote?

A. I would like to get the question clarified before I start to answer. As I understand it now, you want me to read what I have written concerning the watch I was on, the events that happened prior to the collision?

The COURT: No, he is asking you what you wrote in that book.

A. Prior to the collision?

Q. Prior to the collision.

A. I wrote nothing in that book.

Q. Not before the collision?

A. Yes.

Q. In other words, everything you wrote was subsequent to the collision?

A. Subsequent to the collision.

Mr. LILLICK: Q. Will you read what you wrote after the collision and tell me when you wrote it?

A. Up to what time?

(Testimony of Robert O. Minter.)

Q. Whatever appears in the log book for the date of October 24, 1923.

A. That I wrote in this log book?

Q. Yes.

A. "Eight to 12 o'clock. Steaming as before on course 350 degrees true and gyro, 334 degrees per standard compass. Standard speed, 18 knots (173 revolutions per minute). Boiler No. 5 and 6 in use for steaming purposes. Sounding fog signals at the prescribed intervals. 0800. The forecastle lookout reported hearing a fog signal on the starboard bow, exact bearing uncertain. 0801 all engines were ordered to stop. Made the prescribed fog signals. The captain and navigator in the pilot house. Sighted steamer about two points on the starboard bow, apparently on a course in the same general direction as this vessel, but slightly converging with the course of this vessel, distance about 1000 yards. Executed left [222] rudder, followed by steadying on course 20 degrees left of set course (330 degrees true and gyro). The sighted steamer was seen to change course away from the course of this vessel. 0803. All engines ordered ahead two-thirds speed, 12 knots (115 revolutions per minute). Sounding prescribed fog signals. 0804. Ordered speed changed to standard speed, 18 knots (173 revolutions per minute.) At about 0804½ the forecastle lookout reported sighting a ship about two points on the port bow, course undetermined. Immediately afterwards a steamer was sighted from the bridge, showing dimly through the fog, about two points on the

(Testimony of Robert O. Minter.)

port bow, distant about 700 yards. 0805. Left full rudder was ordered and before it could be executed, right full rudder was ordered and executed, and at the same time all engines were ordered stopped, followed by emergency full speed astern, all engines, and three blasts were sounded on the steam whistle. This was followed immediately by one blast on the steam siren, and the sounding of the general alarm, followed by calling all hands to collision quarters. 0807 SS "Silver Palm", British steamer of the Kerr Steamship Line, London, England, collided with this vessel on the port side, between frames No. 18 and 24. The emergency signal was sounded on the steam whistle as the collision occurred. At 0808 ordered all engines ahead, one-third speed. 0809 ordered all engines stopped."

Q. Mr. Minter, if I may interrupt you, unless Miss Phillips cares to have you read further, that is as far as I care to have you go.

Miss PHILLIPS: I think he might complete that last entry.

A. "0809 ordered all engines stopped. The collision caused a hole to be stoved in the port side of this vessel, the damage centering at frame No. 21. The following compartments were found to be partially or completely flooded, and the connections between the compartments and other parts of the ship were secured water tight."

Miss PHILLIPS: That is sufficient. [223]

Mr. LILLICK: Q. Do you remember when you made these entries that you have just read, that is, what time it was?

(Testimony of Robert O. Minter.)

A. The part that I have just read was made approximately between 12 and 1 o'clock, that would be between 1200 and 1300 of the 24th.

Q. What data did you use in making up these entries, Mr. Minter? Was it only recollection.

A. It was the quartermaster's rough note book and my own recollection, and notes I had put down inadvertently on a piece of paper in my hand.

Mr. LILLICK: Have you the quartermaster's rough log book?

Miss PHILLIPS: Yes, I think you have a copy of it. For convenience of reference I will say that these entries are on page 385 of the quartermaster's note book.

Mr. LILLICK: Showing you the book to which you have just referred, Mr. Minter, and in order to definitely identify it, that is the book from which you made your own entries?

A. Yes. I would like to restate that, that is the book from which I got some of the information, not all of it.

Q. Yes, I so understand. We offer the rough deck log from which Mr. Minter just read the excerpts as our next exhibit.

The COURT: It will be received as Respondent's Exhibit 3 in evidence.

(The book was marked "Respondent's Exhibit 3.")

Mr. LILLICK: Q. Mr. Minter may I read with you—that is, you check me—May I step up beside the witness, your Honor?

(Testimony of Robert O. Minter.)

The COURT: If it is necessary.

Mr. LILLICK: The entry in the quartermaster's rough log: "08-12. Steaming as before on course 350 degrees true and gyro. 337 degrees per standard compass. 334 degrees per standard compass. En route to San Francisco, Cal. independently. Standard speed, 18 knots, 173 revolutions per minute.

"Boilers No. 5 and 6 in use for steaming purposes. [224]

"0800 Pit log no reading.

"0801 stopped all engines.

"Sighted steamer on similar course, distance about three-quarters of a mile on the starboard bow.

"0803 all engines ahead, two-thirds speed, 12 knots, 115 revolutions per minute.

"0804, all engines ahead standard speed, 18 knots, 173 revolutions per minute.

"0805 stopped all engines (Emergency full speed astern to avoid collision.

"0807 collided with SS "Silver Palm" (British) Kerr Line, London, Eng. on port bow (right rudder.)

"0808 all engines ahead one-third speed.

"0809 stopped all engines.

"0820 changed course right to 45 degrees magnetic.

"All engines ahead one-third speed, six knots." Unless you care to read further, Miss Phillips, that is all I care for.

Miss PHILLIPS: That is far enough.

(Testimony of Robert O. Minter.)

Mr. LILLICK: Q. Mr. Minter I will ask you whether, on the entry of 0805 where emergency full speed astern appears, when you copied from the book you noticed that apparently an entry under that had been erased?

A. I did not, I do not recall having seen it.

Q. Looking at it now with me am I right in saying that an entry has been erased and the words "Emergency full speed astern" written over it?

A. You misunderstood, I think, what I said before. I said I did not recall having seen it.

Q. But now looking at it?

A. Looking at it now there has been an erasure, and this entry here has been written over the top of it.

The COURT: What is the entry there as it now reads?

A. "Emergency full speed astern to avoid collision." The erased portion only extends over "Emergency full speed astern." [225]

Mr. LILLICK: Q. Running over, would you not say, into the word "astern"?

A. Yes.

Q. In any event, Mr. Minter, you know nothing about that erasure and what there was under "Emergency full speed astern" before the "Emergency full speed astern" was written?

A. I know nothing whatsoever about it, but I dare say it can be brought out by a photostat.

Q. Had your attention been called to this before I just asked you the question on the stand?

(Testimony of Robert O. Minter.)

A. No.

Mr. LILLICK: We offer page 385 of this book in evidence.

Miss PHILLIPS: The quartermaster's note book?

Mr. LILLICK: Yes.

(The quartermaster's note book was marked "Respondent's Exhibit 4.")

Mr. LILLICK: Would it not be well to offer only the pages of the book?

Miss PHILLIPS: Certainly.

Mr. LILLICK: Then the extent of my offer with respect to the deck log, instead of being the whole book, may be limited to the pages upon which the entries appear that were read by the witness.

The COURT: Would you read those pages so that there will be no uncertainty. The quartermaster's note book, page 385 will be received as Respondent's Exhibit 4.

Mr. LILLICK: Q. Will you describe the pages in the rough deck log from which you read so that they may be identified?

A. They are marked as page B and page C, from lines 15 to 26.

The COURT: Respondent's Exhibit No. 3 will be limited to that, page B and lines 15 to 26 inclusive, of C.

Mr. LILLICK: Q. The other day, Mr. Minter, when you were on the stand you testified that as you remembered it, the "Albion Star" turned to starboard. Did you mean by that, as you remembered [226] it, she changed her course?

(Testimony of Robert O. Minter.)

A. Yes, she changed her course.

Q. I think you also said it went back in the fog bank.

A. That is what I said.

Q. Can you give me now from memory why you came to that conclusion?

A. Why I came to that conclusion?

Q. Yes.

A. That she had changed her course?

Q. Yes.

A. You could see she change her course to go to starboard.

Q. So that you actually saw her change course.

A. I do not think there is any doubt about it.

Q. Will you describe to me, Mr. Minter, what a dead reckoning recorder is?

Miss PHILLIPS: Just a moment. Counsel is now getting into a matter not touched on in the direct examination, and I do not think it is proper cross examination.

Mr. LILLICK: Unless my memory is at fault, there was something said about that.

Miss PHILLIPS: You are talking about what Captain Kays said. This witness did not refer to the dead reckoning recorder.

Mr. LILLICK: Very well, I will withdraw the question.

Q. Did the "Chicago" have a dead reckoning recorder on her at the time of the collision?

A. She has had a dead reckoning recorder ever since I have been aboard.

(Testimony of Robert O. Minter.)

Q. Will you tell me what a dead reckoning recorder is?

A. The type of dead reckoning recorder that the "Chicago" has on board is an instrument for recording on a chart the track the "Chicago" would be making according to her speed and courses. This is based on time, the course you steer and speed, and is so built as to record the track according to the scale of the chart that is being used.

Q. Does it work automatically or is it a chart that is made up? [227]

A. Well, it can be arranged to work either way.

Q. Was it worked automatically on the "Chicago" during the time of your watch?

A. I can not answer that question, that is the navigator's duty.

Q. Where is the dead reckoning recorder situated on the "Chicago"?

A. In the chart house, the after end of the chart house.

Q. You personally do not know whether that was in operation?

Miss PHILLIPS: That question has been asked and answered, your Honor, and I object to it on that ground.

The COURT: He has said he did not know.

Mr. LILLICK: We have asked for the production of the dead reckoning recorder chart of the vessel.

Miss PHILLIPS: I am intending to put in that by Commander Gray by the navigator who has all

(Testimony of Robert O. Minter.)

of his charts. He is prepared to testify on all of this. If counsel goes into every question he can possibly conceive of on cross examination we will be here, I believe, until the first of July. I am going to object to counsel cross examining the witness on what the navigator was doing. The navigator will be here and can testify to it.

The COURT: If the witness does not know anything about it, I presume that the issue can be raised at another time by another witness.

Mr. LILLICK: I am only interested in obtaining the dead reckoning recorder of the "Chicago", and if it will be produced by the other witness, that will be satisfactory.

The COURT: Did you want to obtain it in advance of the testimony?

Mr. LILLICK: I would like to see it, if I might, some time during the day.

The COURT: I presume the Government will be willing to allow you to see it. [228]

Miss PHILLIPS: Your Honor, I kept Commander Gray here up to last night, hoping to put him on the stand, but the case has been going so slowly that I let him go last night and he will be back Tuesday. I am not sure whether he took his charts with him, but in any event counsel will have all he wants when he takes the stand, but I do object to his going further with this witness on the dead reckoning recorder, who says he does not know anything about it.

Mr. LILLICK: Q. Going back for a moment to your log, I think you used the words "scrap of

(Testimony of Robert O. Minter.)

paper" in making up the log. You have not any of those scraps of paper, I assume, have you?

A. No.

Q. Mr. Minter, can you tell me what two-thirds of the standard speed of 12 knots an hour is on the Chicago?

A. Two-thirds?

Q. Of standard speed of 12 knots an hour?

A. It would be 8 knots.

Q. And that is according to the table of acceleration is it, that you used as the basis for navigating on October 24, 1933?

A. If you ring up two-thirds, you get two-thirds, or as close to two-thirds as you can get. When you are talking about acceleration and deceleration, it may take a certain length of time to get up to two-thirds, or drop down from it, as the case may be.

Q. Then putting it differently, we have had records indicating the ringing up of two-thirds speed, with standard speed for a portion of the time that morning, 12 knots an hour. What speed does the "Chicago" make, running at standard speed of 12 knots an hour, when she is operating under a two-thirds bell?

Miss PHILLIPS: Just a moment; I object to that as unintelligible, and I object to it as not proper cross examination.

The COURT: I do not understand the question, and I am not in a position to know as to whether the witness knows.

(Testimony of Robert O. Minter.)

Mr. LILLICK: Q. You understand what I mean, do you?

A. I don't know as I do on one point. If you want to know what [229] speed we get when we ring up two-thirds speed when standard speed is 12 knots, I can tell you.

Q. That is what I want to know.

A. When they ring up two-thirds speed and standard speed is 12 knots, we will eventually get 8 knots.

Q. In the same manner, if you are proceeding at a standard speed of 18 knots an hour and ring up two-thirds speed, you would get two-thirds of 18?

A. Two-thirds of 18 eventually.

Q. Eventually?

A. Yes.

Q. Mr. Winter, when you received the position from the other officer of the deck whom you relieved, do you remember what that position was?

A. No, I would have to locate it on the chart. What we do is look at the chart the navigator is keeping at that time, to see his position.

Q. When you made up your deck log from the quartermaster's log, did you discuss your entries with him, or with anyone else?

A. No one whatsoever. That log was written up before I spoke to anyone else concerning the collision or anything that happened that morning, the entire log.

Mr. LILLICK: That is all.

(Testimony of Robert O. Minter.)

Redirect Examination

Miss PHILLIPS: I have a few more questions, and I will try to be brief. I believe there is one question I should have asked on direct examination, that I forgot, and it was this: Did you note or observe how much the "Chicago" swung after the order "Hard right"?

A. As I recollect, glancing at the compass the last time that I saw it, it was just short of 350 degrees true swinging. Now I used that 350 as a reference, because that is marked on the compass as a reference point. Just what the exact heading at that time was I do not know.

Q. How long before the collision was it that you remember seeing it swing to 350?

A. Just prior to the collision. [230]

Q. I have a few more questions. You have referred to your first view of the "Silver Palm" as being a blur with a white spot on it. Can you say how soon after that you could make out that this object was a ship?

A. I would say it was a very few seconds later.

Q. Would you say your impression was that of a ship or an object popping out of a thick wall?

A. No, I would say that she got plainer as she came out, she did not pop out at me.

Q. Going back to the question of visibility ahead, would you say that there was ahead of you a wall of fog, whatever distance you have estimated, I have forgotten now, that you were going to plunge into fog?

(Testimony of Robert O. Minter.)

A. No, I would not call it a wall of fog.

Q. As you advanced did you expect or anticipate that you would have a continuing visibility ahead?

Mr. LILLICK: I object to that, your Honor.

Miss PHILLIPS: I will withdraw the question.

Q. Will you give me your best impression of what the visibility ahead seemed to you?

A. I think I have testified that the visibility was approximately 1500 yards, and the impression that I had from it was that that visibility did not close; in other words, as you progressed the visibility would remain about the same and it would give you a receding appearance, rather than something you were going closer to.

Q. Mr. Minter, you have spoken about the rudder change. I wish you would explain to the court the relation of the rudder angle to a change of course. We are more or less familiar with the operation of an automobile. I would appreciate it if you would illustrate, if you could, the significance of a rudder angle to the change of course, with the operation of an automobile. Do you think you could do that?

A. I think I could.

Q. All right, go ahead.

A. If you wanted to make a very sharp turn with an automobile you would pull your steering wheel around hard, [231] and you would turn, I would say, in a smaller circle than if you did not pull your wheel so hard. A ship acts the same way. If you want to turn short you give her a large amount of rudder angle and she will turn much

(Testimony of Robert O. Minter.)

shorter than if you gave her a smaller amount of rudder angle.

Q. So, if a 15-degree rudder angle were ordered or used, that would mean what kind of a turn?

A. That would mean a normal turn.

Q. We have been using the term "350 degrees true" and "330 degrees true" and the like. Those degrees are given with relation to what direction?

A. Zero north.

Q. I have here, Knight on Modern Seamanship and I am going now to plate 47. Will you pick out on this compass card and show to his Honor 350 degrees true, 330 degrees true and the estimated heading, I believe you gave of the "Silver Palm" at 130 degrees true.

A. 350 degrees is ten degrees left of north. 330 degrees is 30 degrees left of north. 130 true is 130 degrees clockwise from north.

The COURT: True north or magnetic?

A. That is looking at the gyro compass it would be true.

Q. True north?

A. Yes.

Miss PHILLIPS: I have a few more questions referring to the cross examination this morning. You said you used some of the data in the quartermaster's note book. What data did you refer to that you used from the quartermaster's note book?

A. I did not take any of it verbatim from it. I used his notes to correlate my remembrance of what

(Testimony of Robert O. Minter.)

happened during the watch, and wrote up my log book.

Q. At any times during the events you have been describing, did you look at the watch or the deck clock?

A. The only time I specifically recall looking at the watch was approximately two minutes before eight o'clock when I had to take that time in order to make a required report. [232]

Q. Did you use the quartermaster's times in there?

A. To a certain extent, and I made an estimate of what I remembered, and entered my time.

Q. You said a few moments ago in answer to counsel's question, How far was the "Silver Palm" when the "Chicago"—I don't know whether you said blew three blasts, or the order emergency astern was given—anyway your answer was that you had given a previous estimate of 150 yards. Do you remember the question now?

A. I do not recall what it was.

Miss PHILLIPS: Do you remember what you asked him, whether you asked him when the three blasts were given or the emergency astern?

Mr. LILLICK: My question was as to the time the emergency signal of three blasts was given from the bridge.

Miss PHILLIPS: Q. Your answer was that your previous estimate was 150 yards, was it?

A. I believe that is what I said.

(Testimony of Robert O. Minter.)

Q. Is that your present estimate?

A. Yes.

Q. If the safety valve lifted in the fire room would you have heard it on the bridge?

A. I would like to clarify that. You hear the noise that is made by the escaping steam through the escape pipe.

Q. Did you hear the safety valve lift?

A. I do not recall hearing any safety valve lift.

Q. If this had happened could you have failed to hear it?

A. I do not think it is possible you could fail to hear it.

Q. What is the Sal log?

A. That is a log for any change of speed of the ship through the water.

Q. Is there one on the "Chicago"?

A. There is.

Q. Did you look at it any time that morning?

A. I do not recall looking at it now.

Q. What is the custom as to the officer of the dock making entries in the log, what is the practice and custom on your ship on that? [233]

A. Your log has to be written up before you leave the watch; in other words, when the officer of the deck relieving you comes up, you are not expected to leave until your log is written up and signed, that is after the end of the watch. The custom is if you have time you write your log during your watch and if you do not have time you write it up after the watch is completed.

(Testimony of Robert O. Minter.)

Q. Have you ever seen your log since the day you completed the entries in it?

A. I have not seen the log since, in fact I did not have a chance to complete my log before it was locked up, except the time it was produced in the naval court of inquiry.

Q. That was about the first of November was it?

A. I do not recall the date.

Q. Approximately that?

A. Yes.

Q. Does your recollection regarding the order for standard speed ahead, does that agree with the entry in the quartermaster's note book as to the time you got the order?

A. I do not really recall, I have not had a chance to compare them. The quartermaster's note book and the rough log were locked up immediately. In fact you will notice in my log the initials of the officers who were killed or injured have not been entered because the log was locked up before I completed my entries.

Mr. LILLICK: Q. Had the quartermaster a rough log as distinguished from a note book?

A. If I referred to the quartermaster's rough log, I referred to the quartermaster's note book.

Mr. LILLICK: That is all.

Miss PHILLIPS: That is all.

## MANLEY HALE SIMONS,

called for the United States, sworn:

Miss PHILLIPS: Q. What is your occupation? [234]

A. I am rear admiral in the United States Navy.

Q. Will you please give your full name again?

A. Manley Hale Simons.

Q. A rear admiral in the United States Navy?

A. Yes.

Q. How long have you been a rear admiral?

A. Since March 1, 1934.

Q. How long have you been in the Navy?

A. I entered the Navy in 1897.

Q. What is your present assignment of duty?

A. Chief of the staff to Vice Admiral Harris Laning, commander of cruisers, United States Fleet.

Q. Do you know the cruiser "Chicago"?

A. I commanded the cruiser "Chicago" from the date of her commissioning on the 10th of March, 1931 until the 25th of March, 1933.

Q. Will you state briefly when was your first command, Admiral, and will you tell us your subsequent commands and what kind of ships you have commanded?

A. In 1908 I placed the U. S. S. "Panther" in commission at the Navy Yard in Philadelphia and took her to New York Navy Yard where she was placed out of commission. I mention this as my first command. I then had the rank of lieutenant. Subsequently I commanded the cruiser "Milwau-

(Testimony of Manley Hale Simons.)

kee" for two years, mostly operated on this coast, and was detached from her about two months before she was lost at Eureka, California; the captain who relieved me had the misfortune of putting her on the beach. From then I commanded the U. S. S. "Kroonland" which I took over from the Antwerp Line and acted as a transport between New York and St. Nazaire and Brest; and I commanded the U. S. S. "Melville" which was the mother ship for destroyers for 18 months, and I commanded the U. S. S. "Medusa", which was the repair ship for the battle ships of the United States Fleet, for 16 months. I commanded the U. S. S. "Chicago" for two years, which was the flagship of the cruisers of the United States Fleet. [235]

Q. What kinds of situations have you handled the "Chicago" in?

A. Every situation which could ordinarily obtain in peace times, and we tried to simulate situations in war time.

Q. Were you on the "Chicago" when she was in collision with the "Silver Palm"?

A. I was.

Q. Did you see the collision?

A. Yes.

Q. Go ahead and tell his Honor what you saw and heard and did.

A. I was reading the radio messages in the flag plot which is a small room on the flag bridge, which is one level below the maneuvering bridge of the

(Testimony of Manley Hale Simons.)

U. S. S. "Chicago", such messages as had come in during breakfast hour, I was getting up to date reading them. I had left Admiral Laning when I came up to the flag bridge, eating his breakfast in the admirals' cabin, two levels below and almost immediately under the flag bridge. I heard someone call in an excited tone of voice "Collision" outside of the flag plot. I went out onto the flag bridge and started up the ladder to the maneuvering bridge to see what was happening. On the ladder I could feel the vibration of the ship, showing that the engines were going a considerable number of revolutions per minute astern. I could not state the absolute sequence of some of the events that transpired during my trip to the maneuvering bridge, but during the time I heard three blasts on the whistle for going astern, and I heard the ship's siren sounded for collision quarters and a general alarm rung. I passed along the starboard side of the maneuvering bridge and into the pilot house and I saw Captain Kays at the starboard forward window of the pilot house, looking over to port. I glanced in the direction in which he was looking and saw the bows of a freighter from 300 to 500 feet distant from me. The engine room indicators of the "Chicago" were full speed astern. The officer of the deck, Lt. Minter, was standing on the starboard side close to the wheel, [236] and close to the helmsman and was looking toward the helmsman. It occurred to me at that time that I had

(Testimony of Manley Hale Simons.)

left the admiral at the breakfast table, and possibly I had better get him out, as a collision was apparently imminent. I passed along the port side of the maneuvering bridge and there I saw the navigator, Lt. Commander Gray, standing at the port alidade. I glanced over the side to see what the "Chicago" was doing, and noticed that she was practically at steerageway, which is five knots, possibly a little more. I started out for the admirals' cabin, and upon reaching the flag bridge, saw Vice Admiral Laning running from the starboard side of the bridge to the port side of the bridge. I joined him on the port side of the bridge and saw the "Silver Palm" not over 200 or 300 feet distant. I noticed when I reached the lower bridge that I could see down the starboard side of the "Silver Palm" and that she had changed her relative position, relative to me, from the time I had seen her above. When I saw her on the maneuvering bridge, her masts were in line. When I saw her on the flag bridge, her foremost was to the right of her main mast and I could see down her starboard side. I looked over the side of the "Chicago" and it struck me, I knew that she was not making sternway, because we have repeatedly tested the fact that when the engines are making full speed astern, when the propeller wake passes abreast of the bridge, the ship will start to move astern in the water. The propeller wake was not on the port side abreast the bridge at the time I looked over. The collision happened immediately

(Testimony of Manley Hale Simons.)

afterward. I assume the speed of the "Chicago" at the instant of collision, was between three and zero knots through the water. The "Silver Palm" at the time I saw her, was between 20 and 30 degrees on the port bow of the "Chicago". When she struck the "Chicago" the "Chicago" heeled to starboard. The bow of the "Chicago" went around to starboard through an arc, we estimated, of from 40 to 50 degrees. The fact that the "Chicago" [237] heeled away from the "Silver Palm" apparently gave the impression that the "Silver Palm's" bow had retracted, but when the "Chicago" heeled back again to port the bow came into collision a second time. Shall I carry my description any further?

Q. Yes, I want to know what the headings of the two vessels were immediately after the collision. You have described the "Chicago" as heeling over, by which I think you mean tilted.

A. Tilted, listed.

Q. 10 or 15 degrees?

A. Yes.

Q. Tell me what the "Silver Palm" did at the same time.

A. The "Silver Palm's" stern swung rapidly to starboard. When she withdrew, what was left of her bow from the gap that she had made in the starboard side, her keel line was converging to the "Chicago's" and the keel line had an angle of about 60 degrees. The two ships' sterns were abreast each other. She kept on swinging and as she drew off

(Testimony of Manley Hale Simons.)

from the "Chicago" she was taking a position so that the two ships were about parallel, and about 80 to 100 yards apart.

Q. Now going back into a little more detail on some of these matters, do you recall, admiral, hearing the two blast signal from the "Chicago" at any time during the intervals you have described, or prior to the interval you have described? You began at the time you were in the flag plot room.

A. No, I heard no two-blast signal during this interval which I have described. I heard several two-blast signals prior to that time.

Q. Where were you when you heard the two-blast signals?

A. Just before 8 o'clock I was eating breakfast with the admiral in the cabin, and to the best of my recollection I heard the "Chicago" blow one blast fog signal. The admiral remarked to me "We must have picked up the fog again, I was in hopes it had cleared". Then I heard two blasts on the whistle and the admiral said "I guess I will go up to the bridge and see what is happening". I said, "Admiral, [238] finish your breakfast, I will go up," and I went up to the flag bridge. On the starboard side of the flag bridge the starboard lookout was standing, an enlisted man. I asked him if anything had been sighted.

Mr. LILLICK: I certainly, Miss Phillips, will object to any hearsay testimony.

(Testimony of Manley Hale Simons.)

Miss PHILLIPS: Admiral, in this we are asking you to give more what you observed. If, anywhere along the line here you are giving conversation related to something you observed or your estimate of time or distance or anything else. That is the only significance of the conversation, if it helps you to refresh your recollection of any circumstances.

A. While I was standing beside this lookout I heard the "Chicago" blow two blasts on her whistle at intervals of about one minute. I saw emerging from the fog about three quarters of a mile distant and one point forward on the starboard beam, a freighter, heading on a converging course to our course.

Q. What action did the "Chicago" take then, to the best of your knowledge?

A. I know of nothing of my own observation that she did under those circumstances, as it did not worry me, as the ship was practically abeam that was sighted, and not in a dangerous position.

Q. Did you go into the flag bridge at that time?

A. Yes.

Q. I wish you would trace out on this model your route for his Honor. Take yourself back to the point in the breakfast room and go back to the point now, where you came up from the admirals' quarters, and then go on up to the flag bridge. Just trace your route over again.

(Testimony of Manley Hale Simons.)

A. The admirals' mess room is on the port side directly under the maneuvering bridge.

Miss PHILLIPS: May the record show the witness is pointing at a point below the after leg of the tripod of the foremast? [239]

A. I came out of the admirals' cabin, went up the interior ladder, which is amidships, to this level, and continued up the interior ladder to the flag bridge and sighted the freighter which turned out to be the "Albion Star", on the starboard side of the flag bridge, and then went back into the flag plot which is slightly to the port and after side of the deck house on the flag bridge.

Q. Can you state or do you know or can you estimate how long a time elapsed between the "Chicago's" first two-blast signal and the next blast that you heard from the "Chicago". I will withdraw that. You have testified about hearing several two-blast signals. Did you hear any one-blast signal following the two-blast signals?

A. I think I did.

Q. What I want to know is, an estimate of your idea of time between the time you heard this two-blast signal, when you were still at the breakfast table, and the time you heard a one-blast signal. By the way, what did a two-blast signal indicate?

A. Two blasts indicates that the engines are stopped.

Q. And a one-blast signal indicates what?

A. That the engines are going ahead.

(Testimony of Manley Hale Simons.)

Q. Can you estimate how long a time elapsed between the time of the first two-blast signal and the time the engines started ahead?

A. Over two minutes, and not over four minutes.

Q. You said you were in the flag plot room when you heard somebody say the word "Collision"?

A. Yes, I did.

Q. You left the flag plot room, you say. I want you to trace again now, on the ship, your route from the flag plot room just as you made it that morning, pointing out to his Honor where you went.

A. I came out of the flag plot room and started up the ladder which leads to this shelf on the after end of the maneuvering bridge, the ladder running from the port side to the starboard side. From there I passed down the starboard side of the chart house to the [240] starboard door of the wheel house or pilot house. I passed across the wheel or pilot house, which enabled me to see everything in there, and came out to this wing of the bridge, saw the navigator at the pelorus taking bearings of something approaching, saw the "Silver Palm", came down to this ladder, went down here, and at the foot of the ladder I saw the admiral passing across the bridge and going over to look out these windows that are here, and I joined him.

Q. You said something in your testimony when you were narrating the events, indicating that you

(Testimony of Manley Hale Simons.)

were looking for the admiral. Did I get the correct impression, when you ran down the port side?

A. I was looking for the admiral, as, from the vision I had had of the "Silver Palm" on the maneuvering bridge it looked as though she would come into collision with the "Chicago" at the admirals' cabin, and my idea was to get him out of the cabin before he was killed.

Q. Pick out again the place of the admirals' cabin.

A. The admirals' cabin is immediately below the maneuvering bridge, and three levels down from it on the port side.

Q. I want you to pick out on this model the location of the admirals' cabin and mark it in blue, and mark an "X" there?

A. Yes.

Q. Admiral, did you at any time during the occasions that you have been narrating, look at your watch?

A. I did.

Q. Tell us when you did.

A. When I heard the call "Collision" I looked at my watch. It was between 8:05 and 8:05:30. The exact seconds I could not testify.

Q. Then it was between five minutes past eight and five minutes and 30 seconds past eight?

A. Correct.

Q. Whereabouts were you at the time you looked at your watch?

(Testimony of Manley Hale Simons.)

A. In the flag plot.

Q. Did you look at your watch at any time after that?

A. I looked at my watch at the instant of collision. [241]

Q. What did your watch show?

A. 8:06-10.

Q. That is, six minutes past eight, and 10 seconds?

A. Yes.

Q. Do you know whether your watch was with the clock on the bridge, faster than the clock on the bridge or slower than the clock on the bridge?

A. I compared my watch with the clock on the bridge during the morning maneuvers prior to 7:15. It was one minute slow. I used my watch in connection with the signals which were made, and in connection with messages that were sent out. The clock on the bridge in the pilot house generally is kept correct with standard time as received from Washington for purposes of recording maneuvers on the ship.

Q. Did you compare your watch with the bridge clock after the first occasion of comparison?

A. Considerably after the collision I told Captain Kays that I had got the exact instant of collision by my watch and that my watch was one minute slow by the bridge clock, and he asked me to look at it again and I did, and it was still one minute slow.

(Testimony of Manley Hale Simons.)

Q. What was the visibility in the direction of the "Silver Palm" at the time that you have referred to in your testimony?

A. Between 700 and 900 yards.

Q. Did you hear any signals from the "Silver Palm" that morning?

A. To the best of my recollection the first signal I heard from the "Silver Palm" was at the instant of the collision, which was three blasts.

Q. You have referred to feeling vibration as you were coming up the ladder. How soon after the engines go astern does the ship begin to vibrate?

A. The ship does not begin to vibrate until the revolutions pass over the critical vibration point. In the case of the "Chicago" it is about 80 to 100 revolutions a minute before vibration is very much.

Q. Admiral, were you on the "Chicago" when her official trial trips [242] were made?

A. I was.

Q. Where were they made?

A. Off of Cape Charles and Cape Henry at the entrance to Chesapeake Bay.

Q. What can you say as to the reversing powers of the "Chicago"?

A. The Board of Inspection and Survey, as well as myself, repeatedly noted that the "Chicago" was faster in getting action to signals to the engine room than any other cruiser that they had tested.

Q. Do you recall now what her time to reverse is from full speed ahead?

(Testimony of Manley Hale Simons.)

A. In a case of emergency, by numerous trials which we have conducted in order to train the throttle men, from four to fourteen seconds are required to bring the shafts to a rest.

Q. Have you ever been on the "Chicago" when she was going full speed ahead and her engines were put full astern?

A. Yes.

Q. How long a time did it take to bring her to a stop?

A. It varies from one minute and 50 seconds to two minutes and 15 seconds.

Q. That is from full speed ahead to a stop in the water?

A. Yes.

The COURT: At 18 knots?

A. 33 knots.

Miss PHILLIPS: Q. That is her full speed ahead, is 33 knots?

A. Yes.

Q. What can you say as to her reversing power at lower speeds?

The COURTS: I thought you were taking the speed indicated on that morning?

Miss PHILLIPS: I said the full speed. The full speed is 33 knots.

A. In order that my answer does not seem to be a stretch of imagination, I might say that the more steam you have on the boilers, the more steam you can admit to the enormous backing turbines, which

(Testimony of Manley Hale Simons.)

take a lot of steam, this fact compensates for the point of time between the higher and the lower speeds. The tactical data which we used daily in the cruisers indicates that for the individual [243] ships the time of bringing the ships dead on the water is the same, from 30 knots down to 10 knots. Below 10 knots they can be brought to a stop in the water very much quicker. The "Chicago" for example, I have tested her repeatedly from 5 knots to a stop, and the ship stopped in the water between 36 and 42 seconds.

Q. That is, from the time the order was given, you mean?

A. From the time the order was given, that is what we record on the bridge.

Q. You stated that there is compensation in the amount of steam available. I wonder if you could give us a little more what you mean on that. When you are going 33 knots ahead, how many boilers do you have in use?

A. You would have all eight boilers at the maximum pressure there.

Q. And using those eight boilers you come to a stop in the time you have stated: is that correct?

A. That is correct.

Q. If you are going at a lesser speed you have less boilers available: is that right?

A. Yes. We generally use two boilers for all speeds up to and including 18 knots, four boilers for all speeds between 18 and 24 knots. Six

(Testimony of Manley Hale Simons.)

boilers from 24 to 28 knots, and eight boilers for speeds above that.

Q. Do you know the cruiser "Louisville"?

A. I do.

Q. Can you compare her with the "Chicago"?

A. The cruiser "Louisville" was commissioned about the same date as the "Chicago". We operated her on this coast before joining the Fleet. We run her up to San Francisco to report for duty with the fleet in company, and we checked our tactical data, cross checked our tactical data, and the tactical data of the two ships is closer than any other two treaty cruisers data that we have yet compared.

Q. How close is that? You say they are closer than any other two.

A. It is so close that I have always believed that if we could put [244] the "Chicago's" throttle men on the "Louisville" that we could practically superimpose our tactical data curve upon the two ships.

Q. What have you to say about the engineering officer, Lieut. Commander Colton.

A. Lieut. Commander Colton—

Q. Of the "Chicago" you mean?

A. Lieut. Commander Colton—

Mr. LILLICK: I beg your pardon, we object to testimony apparently to be adduced as to the competency of another witness.

Miss PHILLIPS: I would like to state, your Honor, that one of the allegations in the libel is that the "Chicago" did not have competent officers. Cer-

(Testimony of Manley Hale Simons.)

tainly the engineering officer in charge of the cruiser is an officer, and is a matter of interest to the court.

Mr. LILLICK: We object to it, one man's opinion of another.

Miss PHILLIPS: I will reframe the question.

Q. Admiral, while you were in command of the "Chicago" was Lieut. Commander Colton an officer on your ship?

A. He was chief engineer during the entire time when I was in command.

Q. What can you say as to his efficiency as an engineer officer? My purpose in asking that question is that the engineering capacity of Lieut. Commander Colton is directly in issue.

A. The "Chicago's" engineering department stood one in the cruisers during the entire time that he was there, which entitled the "Chicago to carry the white "E" on the funnel and gave prize money to all of the men who served in the engineering department under Lieut. Commander Colton.

The COURT: Q. Does that give the seamen the right to use it?

A. Not the "E" on the funnel.

Q. They wear the "E" on their right shoulder?

A. It gives the engineering department only the privilege of wearing "E", but in gunnery the seamen are given the right to wear that.

Q. Only in gunnery?

A. Yes. [245]

(Testimony of Manley Hale Simons.)

Q. The reason why I said that was because I noticed the witness Deming wore one and I did not know why that was for.

Miss PHILLIPS: Deming was the helmsman. "E" on a seaman's shoulder would indicate what?

A. Excellent in gunnery, for which he received prize money.

Q. Admiral, did the "Chicago" while you were in command of her, make the necessary maneuvers to find out what her turning circles were at various speeds and rudder angles?

A. Yes.

Q. Where was that?

A. Santa Barbara channel.

Q. When?

A. April, 1931.

Q. Were you in command of her at that time?

A. Yes.

Q. Did you supervise the collection of certain data?

A. Yes.

Q. I show you now a photostatic copy of various circles, and ask you to show the court those circles and tell us what they are.

A. This is apparently a photostatic copy of an attempt which we made to determine the Chicago's ability to turn to the right and left by using various angles of the rudder at varying speeds.

Q. Just show his Honor what you mean there.

(Testimony of Manley Hale Simons.)

A. This is 20 knots on which they have used 10 degrees of rudder, with the engines stopped. This is the way the ship goes.

The COURT: Q. From a position of rest?

A. No, you would be going along at 20 knots, then in order to turn quickly you may stop and she would turn on that. You see the plots are made on observation of points on land and we have floats put out that we can plot the course. The second plot is 20 knots 10 degrees left rudder, both engines still going 20 knots. The third plot is with the ship at 15 knots, using 15 degrees left rudder and both engines going ahead and turning that way. This plot is for 15 knots and 30 degrees left rudder, both engines going ahead. This plot is for 10 knots and 15 degrees left rudder, both engines going ahead.

[246]

This plot is for 20 knots, 20 degrees left rudder, both engines going ahead. This is for 20 knots and 30 degrees left rudder, both engines going ahead. This is for 15 knots, 15 degrees right rudder, both engines going ahead. This is for 10 knots, 30 degrees left rudder and both engines going ahead.

Miss PHILLIPS: Q. Is there any difference in the "Chicago's" ability to go right or left?

A. She turns in a slightly smaller circle to the left than to the right, but for all intents and purposes, it is only a few yards difference in diameter, they are considered the same.

(Testimony of Manley Hale Simons.)

Q. If the "Chicago" was going at a speed, let us say of 10 knots and you used the 15-degree left rudder, how long would it take to change her course 20 degrees to the left and steady on the new course? Is my question clear to you, or is it expressed in the correct nautical language?

A. Your question is clear but your change of course is so small that a great deal would depend on which way the ship was yawing at the time the helmsman received the order, how good the helmsman was and how good he was at bringing the ship to rest on the new course. However, I can very readily tell you almost exactly from the proper curve here, which assumes the best performance in all respects, about 50 seconds.

Q. If she is going at eight knots or thereabouts, what would your time be?

A. I have no curve for eight knots, but you could possibly add 10 seconds, making it one minute.

Q. Those are all subject to having a competent helmsman and whether the ship is yawing one direction or the other?

A. Yes.

Q. What do you mean by "yawing"?

A. A ship does not steer a straight course, she follows a curve of sines. If she is swinging to the right at the time the left rudder is put on the ship, the momentum of the bow to the right has to be overcome before she can swing left. [247]

(Testimony of Manley Hale Simons.)

Q. Admiral, does a change of course of 20 degrees on a 15 degree rudder have any tendency to slow the speed of the ship?

A. The rudders of heavy cruisers are enormous. They act as a brake to the ship. Any use of the rudder slows a ship, any change of course, no matter how small, will take off speed. In this case she would probably lose between half a knot and a knot when she steadied on her new course.

Q. That is the question I put, of a change of course, of 20 degrees of course?

A. Yes.

Q. By the way, admiral, did you testify before the Naval Board of Inquiry?

A. I did.

Q. Did Admiral Laning?

A. He did.

Miss PHILLIPS: You may cross examine.

The COURT: We will take a recess now until 2 o'clock.

(A recess was here taken until 2 o'clock p.m.)

[248]

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Afternoon Session.

MANLEY HALE SIMONS,

Direct Examination; (resumed).

Miss PHILLIPS: Your Honor, I would like to offer in evidence as exhibit next in order the sheet showing the turning circle of the "Chicago."

The COURT: It will be received as Government's Exhibit No. 4 in evidence.

(Testimony of Manley Hale Simons.)

(The document was marked "U. S. Exhibit No. 4.")

Miss PHILLIPS: I have one or two more questions to ask the witness:

Q. Admiral Simons, I want you to illustrate with the two models the position of the "Silver Palm's" mast at the time which you referred to in your testimony. Place yourself on the "Chicago," and place the "Silver Palm" with reference to the "Chicago," and point out the position of the masts that you refer to.

A. When I first saw the "Silver Palm" I was standing on the maneuvering bridge and her two masts were exactly in line. When I saw the "Silver Palm" from the lower bridge I could see her after mast to the left of her foremast, which would put her in this position so that I could see the starboard side of the ship.

Q. That would indicate a change of course on the "Silver Palm" in what direction?

Mr. LILLICK: I think, Miss Phillips, that it is objectionable.

Miss PHILLIPS: I will withdraw it.

Q. Did you compare these changes in the position of her masts as you observed them?

A. I did. At first I figured that the "Chicago" must be going through the water astern. I looked over the side to see and to my surprise saw that she was not. I took, accordingly, the only other

(Testimony of Manley Hale Simons.)

possible assumption, and assumed that [249] the "Silver Palm" was swinging left.

Q. I want you to illustrate with the models the reaction of the two ships under the force of the impact.

A. When the "Silver Palm" first contacted the "Chicago" I was greatly surprised to feel no jar, never having been in a collision before, and it apparently was a very soft smooth performance. The "Silver Palm's" bow apparently came right into the "Chicago's" bow until the bow actually hit the base of this turret to the left of the forward turret. The "Silver Palm" then stopped and a sheet of flame went up ten or fifteen feet into the air all around. The "Chicago" heeled over to starboard. This made it appear from where I stood on the bridge as if the "Silver Palm" were backing away, which I thought she was probably doing, but when the "Chicago" righted the bow then came in again and hit on the turret, and a similar sheet of flame went in the air the second time. I found out in the inquiry afterward that the flame was caused by fused paint from both ships, which had been heated beyond the flash point. The "Chicago" then after coming into collision the second time, it was quite apparent that she was swinging off to the right, the "Silver Palm's" stern was also going to the right, and when the "Chicago" had swung so that the first ship which had been sighted, the "Albion Star," was directly ahead. The "Silver Palm"

(Testimony of Manley Hale Simons.)

started to withdraw from the collision, and both ships lay dead in the water about 50 to 100 yards apart, in about a position like I have there.

Q. By that position you mean—let us have it in the record.

A. I mean that the keel line of the “Silver Palm” was inclined between 30 and 40 degrees to the “Chicago’s” keel line, the bow of the “Silver Palm” being closer to the “Chicago’s” side than was her stern.

Q. Would you say that the two ships were, roughly speaking, [250] parallel—not quite parallel?

A. Very roughly speaking, parallel.

Q. I just want to get a rough estimate to have it in the record, because we cannot get into the record a photographic view of the models as you place them. Admiral, what would you say was the angle at which the impact was made?

A. About 30 degrees to the “Chicago’s” keel line from ahead.

Q. 30 degrees to the “Chicago’s” keel line from ahead?

A. Yes.

Q. And what angle would you say the “Chicago,” what number of degrees would you say the “Chicago” swung under the force of the impact?

A. 40 or 50 degrees.

Mr. LILLICK: I would like the answer stricken out and the question objected to on the ground that she swung under the force of the impact.

(Testimony of Manley Hale Simons.)

Miss PHILLIPS: I will withdraw it.

Q. What number of degrees would you say that the "Chicago" swung from her moment of collision until she stopped swinging?

A. 40 or 50 degrees.

Q. Admiral, I want you to assume that the captain of the "Silver Palm" has testified under oath that he sighted the "Chicago" two minutes before the collision at approximately one and one-half points on the starboard bow, at a distance of 2500 yards, the "Chicago" then appearing to be a blur with a bow wave, and he—recognizing it as a ship. Would his testimony to this effect change your own estimate of the distance, time, or speed during the times concerning which you have testified today?

A. Might I have just a minute to figure just a little on that? I think it must be incorrect. It won't take me but a second.

Q. Do you want me to give those conditions again, or have you got them?

A. It could not change my testimony, because the statement which was included in the question of the distance and time [251] that you have given is manifestly a mathematical impossibility to have been accomplished and have a collision. It would have required a speed of considerably over  $23\frac{1}{2}$  knots during the entire two minutes to have been accomplished by the "Chicago" alone, and a speed of 14 knots to have been accomplished during the entire time by the "Silver Palm."

(Testimony of Manley Hale Simons.)

Q. If the captain of the "Silver Palm" had sighted the "Chicago" 2500 yards on his starboard bow, 1½ points, two minutes before the collision, what would the situation require on his part, according to your knowledge and experience in navigation?

A. It would have been extremely simple and in accordance with the International Rules of the road to have given right rudder and at that distance he would have easily cleared the "Chicago," no matter what she did.

Miss PHILLIPS: That is all.

The COURT: No matter what speed she might have had?

A. The "Chicago" would have had to have made terrific speed to have gotten to a new point of collision.

#### Cross Examination.

Mr. LILLICK: Q. As I understand you, Admiral, if the Captain of the "Silver Palm" 2500 yards away saw the "Chicago" 1½ points on his starboard bow and had given a hard a-starboard order on the "Silver Palm," it would not have mattered what course the "Chicago" would have pursued thereafter, for a collision would have been impossible?

A. The "Chicago" could not have reached a collision point if the "Silver Palm" had that distance and had gone right.

Q. You say hard a-starboard?

A. No, I say right rudder.

(Testimony of Manley Hale Simons.)

Q. If I understood you correctly, regardless of what course the "Chicago" would have pursued, at that distance of 2500 yards, two minutes would not have allowed the "Chicago" to have even gotten into position where a collision would have occurred?

[252]

A. I beg your pardon. I think I see what you mean. Perhaps I should have included in my answer, if the "Chicago" had been on the course, the northerly course, on the morning in question, then it would have been impossible for the "Silver Palm" to have come into collision had she turned right.

Q. That was assuming as a part of the question that the "Chicago" was on the course that you knew her to be on that morning?

A. Yes.

Q. Do you know what course the "Chicago" was on when she was 2500 yards away from the "Silver Palm"?

A. I never saw the "Silver Palm" 2500 yards away.

Q. Then your answer would be no?

A. No.

Q. I think inadvertently, Admiral, in reply to a question that was propounded by Miss Phillips, you said that after the two vessels had come into contact the "Chicago" swung to the starboard and the "Silver Palm" swung to the right. You mean the "Silver Palm" swung to the left, do you not?

(Testimony of Manley Hale Simons.)

A. I meant that the "Silver Palm's" bow to be in the collision, could not move and the stern swung to her right.

Q. And the bow of the "Silver Palm" naturally swung to the left?

A. Ordinarily a ship swings around what is known as the center of gravity, the pivoting point. If the bow is held by a line or has entered into another ship, as it was with the "Chicago," that becomes the pivoting point, and the rest of the ship swings with reference to that. Can I illustrate?

Q. I understand you already, Admiral. Thank you. Do you remember just where you were on the "Chicago" when you heard the word "Collision" which you say called your attention to something unusual?

A. I was at the desk, standing up in the after part of the flag plot on the flag bridge, reading a message file.

Q. Do you know who it was that said "Collision"?

A. Not of my own knowledge. I have found out since it was Admiral Laning. [253]

Q. Where was Admiral Laning then?

A. I don't know of my own knowledge, only by hearsay evidence.

Q. You heard that voice, however?

A. I heard a voice say "Collision."

Q. And which as I understand you have learned since was Admiral Laning's voice?

(Testimony of Manley Hale Simons.)

A. Since then he told me he was on the flag bridge and he was the only one who called "Collision" that I might have heard inside of the room.

Q. Do you know how long it was after that, or how long before that it was that the three-blast signal was blown on the "Chicago"?

A. I did not hear a three-blast signal before that time. A few seconds after that time I did hear one.

Q. There was only one three-blast signal blown on the "Chicago" was there not?

A. No, there was another three-blast signal at practically the instant of collision, if I remember rightly, because I thought at the time how foolish it was to blow it.

Q. I think in your direct examination, Admiral, you stated that the human element was—I may be expressing it differently—the variable factor in the operation of mechanical appliances. In other words, an error in judgment, a mistake in judgment or other human element involved in the operation of mechanical appliances will of necessity alter the speed with which these mechanical appliances can be operated?

A. That is perfectly true.

Q. In the estimates that you gave us with respect to time this morning, were those estimates given with the assumption on your part of immediate execution upon the part of those in the "Chicago"?

Miss PHILLIPS: Might I ask what estimates

(Testimony of Manley Hale Simons.)

you are referring to? The Admiral has mentioned several.

Mr. LILLICK: Yes, the estimates to which I have referred are the estimates which you gave at the time within which the vessel could back.

A. Could be brought to a stop in the water?

[254]

Q. Yes, Admiral.

A. The tactical data of the time required from different speeds for a ship to be brought to dead in the water or stopped in the water includes the time from the order given until the ship is dead in the water. It is the average of repeated experiments on the part of the ship, and is placed on tactical data tables which the ship keeps in its records, with which officers are supposed to familiarize themselves before handling the ship.

Q. Admiral, a change of course 20 degrees on a vessel of the type of the cruiser "Chicago", you would consider only a very slight change in her course, would you not?

A. I would.

Q. This morning you testified with respect to the braking power, I think it was, of the rudder upon the "Chicago." Assuming for the purpose of this question that a change was made in the course of the "Chicago" involving 20 degrees, and that the execution of that helm order involved 15 seconds in time, could you give me any kind of an estimate of how much the speed of the "Chicago" would be

(Testimony of Manley Hale Simons.)

checked, would be impeded during that fifteen seconds by such a change in the rudder?

A. I could give you a fairly accurate estimate. Navy ships maneuver in formation. The officer who has charge of the operation of the ship during such time is required to keep an accurate distance from the next ship ahead. In order to keep the ship from closing up he must vary the number of revolutions that the ship is making to let her gradually close up or gradually drop back. Nearly all experienced watch officers will take off, they will drop back the proper distance by throwing the helm over one side and back to the opposite side before the ship swings. The change is made so that the bow of the ship has no chance to swing out of line, and by throwing it over 15 degrees to port and 15 degrees to starboard and back to amidships, the ship will lose 100 yards. 100 yards is the equivalent of one [255] knot difference in speed. Therefore, the mere act of throwing the helm over 15 degrees and allowing the ship to swing only 20 degrees change of course would take one knot off of the speed of the ship, as a conservative estimate.

Q. You have not answered the question asked. In that second of time required to execute the order, which I have asked you about, not 15 degrees back, but 15 degrees over, how much would the vessel be affected by that, would you say 100 yards?

A. 15 seconds of time is not the time you stated.

(Testimony of Manley Hale Simons.)

Q. I intended to. Let me ask it again. It is my understanding that the helmsman changed the course of the "Chicago" 20 degrees and in executing the order took 15 seconds. I thought I asked you that.

A. I understood you said 15 degrees rudder.

Q. Well, let me reframe the question. Assuming, then, that the "Chicago" had a helm order to change her course 20 degrees, and that it took 15 seconds within which to execute that order. How much would the braking power be per knot on the "Chicago" up to the time the "Chicago" was on the other course?

Miss PHILLIPS: Just a moment, I think counsel should explain what he means by the word "execute." Nobody has testified in this court that it took 15 seconds to put the "Chicago" on the course 20 degrees. Maybe counsel has something in his mind when he says "execute."

Mr. LILLICK: Let me frame the question, and if you will, correct me, I may be in error, Admiral. I have assumed that the course of the "Chicago" was only 20 degrees, that in altering the course 20 degrees the man at the helm took 15 seconds within which to do that. That is manifestly impossible, is it not?

A. It is.

Miss PHILLIPS: And nobody has so testified. I think counsel is assuming something now contrary to the testimony.

(Testimony of Manley Hale Simons.)

Mr. LILLICK: The question is answered and we will go on to [256] the next question. How long would it take, in your opinion, with the "Chicago" running at a speed of between 10 and 12 knots an hour, to alter her course 20 degrees?

A. Between 30 and 50 seconds.

Q. And during that 30 to 50 seconds would her rudder, swinging over in order to execute that maneuver, brake her speed down 100 yards?

A. I don't know what you mean by braking the speed down 100 yards. Do you mean it would be less than 100 yards in a minute?

Q. I am using the words as I was interpreting the meaning of braking. What I meant to convey, Admiral, was what effect in the way of loss of speed would the rudder have with respect to yardage during that period of seconds which you say would be required to complete the maneuver?

Miss PHILLIPS: Are you referring to the 15 degree rudder or some other degree of rudder?

Mr. LILLICK: I am referring to the question that the Admiral asked a few moments ago.

A. I will put that in there, the order of 15 degrees rudder, the speed in yards per minute would be slowed at least 100 yards; the speed in miles per hour would be slowed at least one knot.

Q. So that the knots per hour, working back half a knot or a knot, at an 18 knot speed would bring it down to so many yards within so many seconds?

(Testimony of Manley Hale Simons.)

A. Yes. I will add to that connecting the two with 18 knots per hour is 1800 yards in three minutes, or 600 yards in one minute.

Q. And at a speed of ten knots an hour, how many feet per minute? Have you that as readily in memory as the other example you gave?

A. Taking your speed in knots per hour, in this case you gave me ten knots per hour, the number of yards that she would cover in three minutes is always the same with two ciphers added, therefore if she makes ten knots in one hour she would make 1000 yards in three minutes. In one minute she would make  $333\frac{1}{3}$ . [257]

Q. That is a very simple way of saying it. I never heard of it before. I have been instructed to multiply by 10.33 to get the answer in feet. Yours is a simpler method. I think that is all.

Miss PHILLIPS: Your Honor, at this time I am going to ask leave to withdraw Admiral Simons and recall him after the next witness is called, as an expert witness, if that is agreeable to the Court.

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ROBERT C. STARKEY,

Called for the United States; sworn.

Miss PHILLIPS: Q. What is your occupation, Mr. Starkey?

A. At the present time I am serving on the U. S. S. "Louisville" as navigating officer.

(Testimony of Robert C. Starkey.)

Q. What is your rank?

A. Lieutenant Commander, United States Navy.

Q. How long have you been in the Navy?

A. Since 1910.

Q. How long have you been in your present rank?

A. Since 1925.

Q. Have you participated in any tests recently by the cruiser "Louisville"?

A. I have.

Q. I show you a plot. Is this plot made from the tests you have referred to?

A. This plot was made on the 6th of March, 1934, from the test we made at that time.

Miss PHILLIPS: I think it would be convenient both for the Court and counsel if I gave them a photostatic copy of the plot while this witness is testifying. I think both of you can follow it very much more easily.

Q. Now, Mr. Starkey, I would like to have you state the condition under which the test was made by the cruiser "Louisville." In the first place, where was the test made?

A. The test was made off San Clemente Island, about two miles off-shore.

Q. What were the conditions of weather, I mean generally, as to wind and sea?

A. The wind was about Force 1 or 2. The sea was smooth. [258] The visibility was about five miles.

(Testimony of Robert C. Starkey.)

Q. Was there any current?

A. No current.

Q. What part did you take in making this test?

A. I had general charge of everything on the bridge, observing the Sal log, the revolution counter, and the engine orders that were given, and also noting the time.

Q. Did you give the orders, yourself?

A. I gave the orders, myself.

Q. Did you have anybody assisting you?

A. I had some other officers recording for me at the time I would mention the time, and also would mention what the recorder read.

Q. Did you afterwards check their records?

A. I did.

Q. Did you find them to be correct?

A. They were correct.

Q. Now, let us have first the conditions. At the start what speed was the "Louisville" going, at the start?

A. At the time of the start she was going zero minutes. The speed of the "Louisville" was 18 knots.

Q. What were the engines doing?

A. The engines were going ahead 172 revolutions, which is 18 knots.

Q. That is, at zero hour?

A. That is zero time.

Q. What was the first order given, and when?

(Testimony of Robert C. Starkey.)

A. The first order given at the zero hour time was Stop.

Q. What was the next order given and when?

A. Two minutes thereafter  $2/3$  ahead or 12 knots.

Q. What was the next order given?

A. At 3 minutes ahead standard 18 knots.

Q. What was the next order given?

A. Four minutes, Emergency full speed astern.

Q. Did the orders to the engine contemplate any order to put steam in the astern turbine, or what was the situation?

A. We followed the doctrine which does not prescribe that. [259]

Q. Now, then, let us take at the end of the first two minutes, bearing in mind we start at Zero with the Stop order. At the end of two minutes what did your revolution counter show?

A. 68 revolutions.

Q. At that time what was your speed, what were your knots by the Sal log?

A. About  $10\frac{1}{2}$ .

Q. At the end of the two minutes, then, you had a two-thirds order, and then at three minutes you say there was a standard order: Is that right?

A. That is right.

Q. Now, at the end of the fourth minute Emergency full astern?

A. Emergency full astern.

Q. At the time of the Emergency full astern order what revolutions had the engine reached?

A. 132.

(Testimony of Robert C. Starkey.)

Q. And what was the speed of the Sal log?

A. 12 knots.

Q. At the end of the fourth minute you say the Emergency full astern order was given?

A. Yes.

Q. Now, in how many seconds did the engine revolutions drop to zero?

A. In 22 seconds.

Q. Now, after the Emergency full astern order, in what length of time was the ship dead in the water?

A. 1 minute and 55 seconds.

Q. At what revolutions were the engines going when the ship became dead in the water?

A. About 107 turns.

Q. Do you know whether any readings were taken to get the distance traveled between the time the Full astern order was given and the time the ship was dead in the water?

A. There was. We had a range finder on the stern of the ship and they took the distance from the float we dropped over at that instant and they took the range finder reading.

Q. Did you have any part, yourself, in taking the range finding readings?

A. I just checked the figure after it was handed to me. [260]

Q. Now, Commander Starkey, I am going to ask you, supposing at the end of that two minutes, under the Stop order, your engine revolutions were instead

(Testimony of Robert C. Starkey.)

of reading 68 in fact ten revolutions, how would your knots by Sal log have been affected?

A. They would have been much lower. I would say they would have dropped to around five knots.

Q. Supposing at the end of the four minutes that your engine revolutions climbed from 10 to 120 or 125 instead of climbed from 68 to 132 as shown in your plot: Suppose those had been, as I say, climbed from 10 to 120 to 125, how much would you say the Sal log would have been affected?

A. The speed of the Sal log would have been between 9 or 10 knots, in that vicinity, between 9 and 10 knots.

Q. Commander Starkey, where was the helm during this test made by the "Louisville"?

A. Amidships.

Q. Was it amidships all the time, or part of the time, or how?

A. During the whole test it was amidships.

Q. Suppose the helm, instead of being amidships at the time the Emergency astern order was given, was in fact ordered hard over, would you say that would make any difference in the actual speed of the ship?

A. Very much so. It would decelerate the ship's speed quite a good bit, if any helm order had been given, and especially full rudder.

Q. Commander Starkey, I observe on this plot that it seems that the Sal log speed line comes to zero at approximately 6½ minutes, whereas you say

(Testimony of Robert C. Starkey.)

after the test began, or two minutes and a half after, the Emergency full speed astern order was given. You said the ship came to a stop in 1 minute 55 seconds. There is apparently a discrepancy of 35 seconds here. Can you explain that?

A. Between zero and 5 knots on a Sal log it is not calibrated, and it is just a matter of estimating, and also due to [261] the pressure in the instrument, itself, it does not settle from 5 to zero immediately.

Q. How long had the "Louisville" been out of dry-dock at the time of this test?

A. Four months.

Q. Will you explain to his Honor the lines on the two sides of the plot? You observe on one side you have figures from 0, 1, 2, 3, 4, and on the reverse side it gives 0, 10, 20, and on up. Will you explain what those mean?

A. The R. P. M. curve there is plotted to the right-hand; in other words, revolutions per minute are plotted there, the R. P. M. curve. The Sal log curve is plotted to the other scale here of knots.

Q. It shows knots on the left hand and revolutions per minute on the right?

A. Yes.

Q. If your Emergency full speed astern order had been given under the assumed conditions of between 9 to 10 knots ahead, would you have come to a stop any sooner than you did come?

A. Yes, we would.

Q. What would about the distance covered?

(Testimony of Robert C. Starkey.)

A. The distance would have been shorter, too.

Miss PHILLIPS: You may cross examine.

Cross Examination.

Mr. LILLICK: Q. Mr. Starkey, when these tests were made were the engine crew told that you were going to make a test?

A. Yes, they were.

Q. How many boilers did you have in operation?

A. Two boilers.

Q. And what were the numbers of the boilers of the "Louisville"?

A. I am not positive, but I think it was 1 and 2.

Q. And the same number of throttle men are required on the "Louisville" that are required on the "Chicago"?

A. I could not tell you.

Q. How many throttle men operated when you made this test on [262] the "Louisville"?

A. I could not tell you that.

Q. Do you know what the condition of the bottom of the "Louisville" was at the time as to being clean or foul?

A. It was four months out of dock.

Q. After having been four months out of dock could you tell me what, if any, difference she had as to speed than when she was clean?

A. There will be some difference in her speed due to the barnacles on her after four months out of dock.

Q. In what waters was she after having been out of dock?

A. She was around the San Pedro area.

(Testimony of Robert C. Starkey.)

Q. In warm weather?

A. Yes.

Q. Do you know how long before this test was made on the "Louisville" her boilers had been cleaned?

A. No.

Q. Had you prior to the time the test was made given either one of these two boilers a hydrecon application?

A. I could not tell you.

Q. While the tests were being made, you can tell me whether she then was testing out hydrecon drying in her boilers?

A. No.

Q. She did not have any such test?

A. I don't know that she did.

Q. Wouldn't you know whether at the time you made the test the boilers were in their normal condition?

A. I assume that they were.

Q. In any event, you don't know that there was any hydrecon that had recently been put in under the boilers?

A. No.

Q. Do you know whether on the occasion of this test any one of the throttle men in the engine-room was slow in his operation of the throttle?

A. I could not tell you. I imagine this was just normal practice down there for them.

(Testimony of Robert C. Starkey.)

Q. So that if on the "Louisville" when this test was made your throttle men were operating the throttle as customarily the normal use of the throttles would have been employed?

A. Yes. [263]

Q. In making that test some difference would have been made in the results, would there not, had the various throttle men operating the engines not carried on their work properly? There would have been a difference in the speed attained, would there not?

A. You mean if they had been slow in acting?

Q. Yes, if they had been slow in acting.

A. Yes.

Q. The "Louisville" has four propellers, as the "Chicago" has?

A. Yes.

Q. And operating with two boilers then used on the test it required, without doubt, four throttle men, did it not?

A. Yes, I would say so.

Q. One throttle man to each one of the four throttles?

A. Yes.

Q. And if in that test that morning one of the four throttle men was slow in his operations it would have affected the speed of the propeller on the engine, which he was operating, would it not?

A. Yes.

(Testimony of Robert C. Starkey.)

Q. That would, to some extent, have affected the speed of the "Louisville" on the test?

A. Well, personally I do not believe it would, unless it had been an appreciable length of time.

Q. Let us say a minute and a half.

A. It would in that time.

Q. When you are operating on a test, will you tell me whether the orders that they sent down to the engine-room were sent through another officer at the bridge telegraph?

A. I actually operated the bridge telegraph myself.

Q. So that the times that you have given are times when you started at zero with a stop watch?

A. Yes.

Q. So that the first movement of the engines ensuing after you were on the bridge was that at zero with a stop watch in your hand you rung the signal to the engine-room?

A. That is right.

Q. And in each succeeding time indicated upon your test that time was taken with a stop watch?

A. Yes. [264]

Q. Do you know in the engine-room on the occasion that you made your test how many men were in the different rooms?

A. I do not.

Q. Was the test made upon a regular run of the "Louisville" or while you were maneuvering otherwise?

(Testimony of Robert C. Starkey.)

A. We had been sent out that day for gunnery exercise, and they cancelled the exercise and we proceeded with the test.

Q. What time of day was it?

A. About three o'clock in the afternoon.

Q. A clear day?

A. The visibility was about five miles.

Q. Do you distinguish between a hazy atmosphere, meaning a five-mile visibility, or would you say it happened to be a day when you could see five miles because there was fog or some haze there?

A. There was haze. When I said the visibility was five miles, you could actually see five miles. Beyond that it was hazy.

Q. There was no fog?

A. No.

Q. How far off shore were you?

A. About two miles.

Q. You said that there was no current. Was an actual test made that day as to whether there was a current?

A. There was none made that day. I am just speaking from my actual experience in navigating in those waters, that we have never experienced any current.

Q. How far south of the Santa Barbara Channel were you?

A. About eighty miles.

Q. Directly off what point on shore?

A. The southeast end of San Clemente Island.

(Testimony of Robert C. Starkey.)

Q. How far off does San Clemente Island come to the main coast?

A. 60 miles.

Q. There is no current there, at all?

A. There has never been any there that I know of in all of our operations around there.

Q. If there had been a current of a knot per hour would it have affected the test that you have graphed upon this chart?

A. Very apt to. [265]

Q. It would have meant a difference in proceeding against a one-knot current of a retarding upon the yardage covered going forward, would it not, against the current?

A. If you mean if we were heading into the current, I don't know, because our float would have been affected by the current and it would have moved that off further.

Q. I am not sure that I understand your answer. Do you mean that the speed you attained that day was a speed in smooth water in which no effect was had upon the speed of the "Louisville" as measured by your plot: Is that what you mean?

A. I don't understand that.

Q. I will try to approach it from another angle. Let us assume that you were, when making the test, going against a current of one knot per hour. Would the revolutions per minute to attain a speed of 18 knots have had to be increased because you were going against the current?

(Testimony of Robert C. Starkey.)

A. Yes, they would.

Q. And in going with that current your revolutions per minute would go down, would they not, correspondingly?

A. Yes.

Q. In other words, a difference of a knot an hour in current would mean another variation in the accuracy of the test you made that day?

A. Yes.

Q. You had nothing about you from your position upon the bridge to induce you to be careful about the tests as to speed and where your vessel would go: That is true, is it not?

A. I don't understand what you mean.

Q. On that day the weather was clear, you had no vessels about you which you had to be careful about?

A. No.

Q. In other words, you were there on the bridge that day, in clear weather, with nothing to obstruct your vision, a stop watch in your hand, and had a ready-to-go crew to follow through every maneuver that you made that morning or that afternoon?

A. Yes. [266]

Q. You made the statement that the doctrine does not prescribe steam in the astern turbine. Will you explain that? I do not understand it.

A. When we stop that way they just let the propellers idle till they come to a stop. In other

(Testimony of Robert C. Starkey.)

words, they do not bleed steam into the astern turbines to check their idling, to brake them.

Q. Have you a graph in your hand?

A. Yes.

Miss PHILLIPS: Oh, yes, he has the original.

Mr. LILLICK: Q. I notice in the block over the left hand side of the chart where you attain a— will your Honor permit the witness to step down by us so that we may point to what I wish to refer to?

The COURT: Yes.

Mr. LILLICK: Q. I call your attention to the line drawn from the bottom of the page between the figures 4 and 5 running up to a height marked by the figure 15 upon the left-hand side of the page.

A. That is 132 revolutions, that is the revolution curve.

Q. And dropping from 130 revolutions down again, does that line down to zero indicate that the revolutions per minute dropped within 30 seconds to zero?

A. Yes, less than 30 seconds; in fact, they dropped within 22 seconds.

Q. Then in the line immediately following, running up from zero to revolutions per minute 107 how quickly did the engines attain that speed?

A. From zero one minute and thirty-eight seconds.

Q. Do you know how the engines were operated when that speed was run up to that figure?

A. No.

(Testimony of Robert C. Starkey.)

Q. What was the order given to the engine-room?

A. Emergency full speed astern.

Q. From Emergency full speed astern the revolutions per minute of 107 running astern, 108?

A. Yes. [267]

Redirect Examination.

Miss PHILLIPS: Q. That is, the last curve from zero to 108 represents a curve showing revolutions astern?

A. That is right.

Q. Commander Starkey, I have just one or two questions. Counsel referred to the point whether or not if you had been running against a current of one knot, whether that would have made any effect, and some reference was made to the speed of the revolutions; if you were running against a current of one knot with 172 revolutions would you make 18 knots?

A. No, it would make 17.

Q. You have said this test was given in fair weather as a test. Is that correct?

A. Yes, that is correct.

Q. Was any apprehension felt, so far as you know, on the ship, that life, itself, might depend upon the prompt execution of the orders?

A. No.

Miss PHILLIPS: That is all.

(Testimony of Robert C. Starkey.)

Recross Examination.

Mr. LILLICK: Q. When your engine-room crew operated the engine from stop to two-thirds ahead on the first maneuver, were they following any standard table of acceleration or did you have that worked out for you?

A. As far as I know they were following the regular doctrine of acceleration.

Q. What is the regular doctrine of acceleration, can you tell me?

A. That is a thing I cannot tell you.

Q. I know so little about it, myself; that is a table in the engine-room, is it?

A. Yes.

Q. And so far as you know there may have been a standard table of acceleration in use on the "Louisville" on that day?

A. I am practically sure it was the standard doctrine that they used that day, because there were no orders given to do anything otherwise.

Q. Are you an engineer officer, as some of the gentlemen in the Navy are, as well as navigating officer?

A. I never had any [268] experience in the engine-room.

Q. Did you know at the time you made the test that you were making the test for the purpose of testifying in this case in the "Chicago" collision?

A. I knew somebody was going to have to testify, yes, but I did not know that I was, myself.

(Testimony of Robert C. Starkey.)

Q. The signals that you gave were given with as excellent seamanship as they could be carried out on the vessel that day?

A. Yes.

Mr. LILLICK: That is all.

Further Redirect Examination

Miss PHILLIPS: I have just one or two questions.

Q. Captain Starkey, I have run into the expression "12 knots through the water or 12 knots over the ground." For instance, we may speak of 18 knots through the water and 17 knots over the ground against the current.

A. Yes.

Q. I am not just clear in my own mind why those terms are used, and I get mixed up on it, and I am going to ask you to try and straighten it out.

A. If we had a knot current against us and we were making what is supposed to be 18 knots revolutions, our speed would actually be over the ground 17 knots, due to the current against us.

Q. If you had a current against you and your engines were making 17 knots, what would be your speed through the water?

A. The speed through the water would be 18 knots, and over the ground 17 knots.

Mr. LILLICK: I assume that the members of the engine-room crew knew as well as you that you were making the test for subsequent proof?

A. Yes.

(Testimony of Robert C. Starkey.)

Miss PHILLIPS: None of them had any feeling that life depended upon their acting promptly?

A. Not as far as I know. [269]

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MANLEY HALE SIMONS,

Recalled.

Miss PHILLIPS: Q. Admiral Simons, do you know anything about hydrecon boiler material? There has been some reference made to the fact that the "Chicago" was testing out in her boilers that morning some such material as that.

A. Nothing except correspondence that came through from the Bureau of Engineering, Navy Department, that they would like to have some cruiser test this new material which was a protective material to be placed on boiler surface, to lengthen their service.

Q. What was the purpose of it, just to test it?

A. The purpose of the material was to vitrefy the brick surface of the boiler very much as you would vitrefy a coffee pot.

Q. Could it have made any difference in the efficiency of the running of the "Chicago's" engines that morning?

A. Not the slightest.

Miss PHILLIPS: I would like to have this plot which the last witness has used marked as an Exhibit next for identification.

(Testimony of Manley Hale Simons.)

The COURT: It will be marked Government's Exhibit A for identification.

(The document was marked "Government's Exhibit A for identification.")

Miss PHILLIPS: Q. Admiral Simons, I would like to have you examine this Exhibit A for identification. This has been identified by a witness from the cruiser "Louisville." You testified this morning that you were well acquainted, I believe, with the cruiser "Louisville." Do you know what that ship called for in the way of personnel in the engine-room to operate the ship?

A. In the way of what?

Q. Personnel, for instance, at the throttle, whether there are two men at the throttle on the "Louisville," or six men, or four men, [270] or what?

A. There is a throttle man to each throttle, and there are four attendants on watch at a time.

Q. Now, examing this exhibit, you will observe that on the exhibit the Sal log curve begins at 18 knots, and the engine revolution curve begins at 172 or 173, and in two minutes under Stop order the engine revolution curve drops to approximately 67, I believe that is, and then under the two-thirds ahead the engine revolutions go to 132, and the Sal log curve goes from 18 down to just under 10, and then up to slightly over 12. Do you follow me on that, Admiral?

A. I do.

(Testimony of Manley Hale Simons.)

Q. Suppose the testimony were that the engine revolutions had dropped from 172 to 10, what effect would that be on the Sal log curve, I mean what difference, if any, would there be in the Sal log curve if the engine revolutions were as I stated them?

A. The Sal log curve would undoubtedly have dropped to very close to six knots, instead of just under 10, as shown here.

Q. Admiral Simons, have you seen the exhibit that I am now showing you, which is a photostatic copy of Exhibit A for identification, and on which is a blue line marked on the engine revolutions curve dropping from 173 to 10. Do you find that?

A. I do.

Q. Now, if it be assumed that the testimony in the "Chicago" case is going to show such a drop, would it be possible for you to plot in what would be the Sal log curve, which would accompany, you might say, such an engine revolution curve?

A. It would be possible to plot in a curve which would show an estimate of the Sal log; the curve would be one which would become quite close to what actual trial would show.

Q. I wonder if you can on that photostat I have shown you, that is marked blue, put in in red pencil what you estimate the Sal log would be?

A. Yes. [271]

Q. Now, Admiral Simmons, we have been using the term "Sal log." I want you to explain to the

(Testimony of Manley Hale Simons.)

Court what difference you think there is, if any, between the Sal log and the actual speed of the ship?

A. When the engines or the revolutions per minute are slowing down, decelerating, we call it, the Sal log lags behind the actual speed of the ship, that is, the speed indicated by the Sal log is always greater than the actual speed. This is reasonable because the Sal log is simply a measure of a pressure tube which is on the side of the ship under water and until the pressure diminishes the Sal log still registers the speed from which you are going. Similarly, when the ship accelerates speed it is only when pressure in the tube which is part of the Sal log, pressure of the sea water increases that, that the Sal log registers, and therefore it is just behind the actual speed of the ship, and considerably behind the revolutions of the engines in acceleration. The actual speed curve of the ship is always between the Sal log curve and the revolution curve.

Q. I have not another colored pencil, I think I will have to ask you to mark in what you would estimate the actual speed curve. Let us have the first red line you have made marked with the Sal log curve and then put in your estimate of what the actual speed curve is, R. P. M. in blue.

A. The Sal log in red?

Q. Now I am asking you to put in a second blue line of the actual speed curve.

A. Yes.

(Testimony of Manley Hale Simons.)

Q. Will you put in on that second line "Actual speed curve"?

A. Yes, I want to see that I have got this right, "Actual speed curve estimated."

Q. You say the actual speed curve estimated. Can you state the degree of accuracy that you would say that estimate is, or is it possible for you to tell us—you might say the range.

A. Of not over one knot out provided the Sal log curve is not [272] similarly over one knot out.

Q. Now, Admiral Simons, I might ask you just one or two more questions. If you will look at that plot, would you say that a 20 degree change of course upon a 15 degree rudder through the second and third minute shown in the plot, would you say that would make a difference in the course?

A. Yes. The actual speed would fall lower than we have shown it.

Q. You testified early this afternoon, I do not want to go into too much detail, that a 15 degree order might make a difference of—what did you say it was?

A. About one knot.

Q. About a knot?

A. Yes.

Q. If there were a 35-degree rudder after the fourth minute when the engines are backing down, would you say that would make any difference in the curve and in the result?

A. Not in the speed curve at the last, because in this curve the speed of the ship through the

(Testimony of Mauley Hale Simons.)

water is so slow that the rudder would have little effect in dampening it—the effect of the rudder in dampening the speed is only when we get above what we call the lazy speed; the lazy speeds are below twelve knots. Below 12 knots there is very little effect in slowing the ship down unless the rudder is kept over and persisted in.

Q. Your estimate on the rudder effect the last of the four minutes when the engines are going full astern is what?

A. From the fourth minute on I believe that putting the rudder over would have very little effect, not over one-half knot at the most.

Q. Why is that, when the engines are going full speed astern—why is it that the rudder is so ineffective? I wonder if you can illustrate it with the model.

A. I can illustrate it by recalling to your mind what we all did when we were children, if we dropped a bucket over from a boat and tried to drag the bucket through the water we could not do it unless the man who [273] was at the oars stopped rowing, it would pull us out of the boat. The big rudder they have on these cruisers is very much like the bucket that I have used as an illustration when the ship is going through the water, it gives a tremendous pull backward on the ship, it executes a tremendous horsepower tending to slow the ship down. If the ship is going slow it causes less pull. When the ship is down to 3 or 4 or 5

(Testimony of Manley Hale Simons.)

knots the movement is not perceptible in the water except to a practiced eye. [274]

Miss PHILLIPS: I would like to have the first Exhibit A for identification offered in evidence as Government's next in order, and the second exhibit, which the admiral has just marked, Government's A for identification. I would have to have other evidence showing the assumed conditions there.

The COURT: Government's Exhibit A for identification will be received as Government's Exhibit 5 in evidence, and the other one marked Government's Exhibit B for identification.

(The document was marked "Government's Exhibit 5 in evidence".)

Miss PHILLIPS: You may cross examine.

#### Cross Examination.

Mr. LILLICK: Q. I am not quite sure that I understood a word that you used on connection with the rudder, it sounded like "lazy" speed, below 12 knots. In connection with the rudder a speed over 12 knots is, in practice with you, a speed at which the rudder commenced to operate like the bucket example that you have given to counsel. Is that what you meant?

A. No, not exactly.

Q. Then it is because I do not understand it, captain.

A. I think I can clear you up on that. A rudder on a cruiser is a large balanced rudder, that is, when it is put over part of it sticks out one side

(Testimony of Manley Hale Simons.)

of the ship's run, and the other part on the other side. If it is put hard over it then is just the same as if you put two planes out that you had to drag through the water. In our instruction in physics, when we were at school, the pressure of the water on that is directly proportional to the speed at which the ship is going, and the size of the surface that is dragged through the water; knowing the surface of the rudder and the speed of the ship, it would be a simple matter to calculate the horse power which was exerted in dragging that through the water; this horse power is effective to subtract from the horse power which is driving the [275] ship.

Q. At 12 knots, that is the point at which your speed was spoken of, which was subsequently put at four knots an hour, where it would have no effect. It gradually, up to 12 knots, has greater and greater effect. I am just trying to get in my mind the point of 12 knots, and your reference to the rudder in connection with 12 knots.

A. In the second case which Miss Phillips questions me on, the engines were going astern. Putting a pressure on the back space of the rudder as well as the front space would tend to neutralize the braking effect of the water.

Q. Upon the exhibit on which you indicated to us the actual speed in blue, the speed indicated upon this graph, that is a speed computed on the basis

(Testimony of Manley Hale Simons.)

of the background of the graph. Am I right about that?

A. Yes.

Q. In other words, in making the actual speed estimate that you did, you qualified your computation of the speed as estimated partly because it was following a graph that represents the experiment made upon the "Louisville" or tests made on the "Louisville". Is that a fair statement?

A. I am afraid I must confess that I did not base it entirely on this experiment performed on the "Louisville". I have seen similar graphs, at least 10 similar graphs performed on other ships, and I merely assumed that the speed which I assumed as the actual speed would fall that amount below the Sal log.

Q. With the figures given upon the graph or upon which it is drawn today? Perhaps that is not clear. What I am trying to ask you is whether the actual speed as indicated by you upon this graph is actual speed based upon the assumption upon your part that the background of the graph indicated the speed upon which you were to base your estimate. Am I expressing myself so that I understand what you mean?

A. Yes, you do, but you have apparently [276] not grasped how I made the sal log curve.

Q. I would like to have you explain it because I would like to understand it myself.

(Testimony of Manley Hale Simons.)

A. I might have—had I based the sal log curve on the diagram which was originally on that ship, to make it fit the new blue revolution curve which was put as a hypothetical curve from other testimony—I might have moved it down, used the same ordinates and abscissae, I might have moved it down to exactly the same distance above or under. In actuality it could not have been a true curve, because as the revolutions are decelerating, the wider the revolution curve will be from the actual curve, and from the sal log curve, so you will note from my curve that I made a general allowance for this fact. Also if the sal log curve and revolution curve are within one or two knots of each other, the actual speed curve splits the difference between them. To be on the safe side of the case I came closer to the sal log curve than I did to the revolution curve because I did not want my estimate to be smaller than actuality.

Q. That is a very simple explanation of what seems to me to be an exceedingly complicated situation. I want to call your attention to the legend, "Estimated time one minute 55 seconds." What would you understand is meant by "Estimated time one minute 55 seconds"?

A. It is the time which the ship traveled from emergency full speed astern to ship dead in the water.

Miss PHILLIPS: You will note in this that I did not draw in on the r.p.m. curve the drop of the

(Testimony of Manley Hale Simons.)

r.p.m. curve to zero. Did you observe that on this first r.p.m. curve we had only taken it up to about 125 ahead and we did not bring it down to any particular point?

A. I assumed that where you did not carry it down in order to complete the curve you intended it to coincide with the curve previously on the diagram. I assumed that your blue was only the part of the curve in which you differentiated- [277] ed any testimony from the other.

Q. That clears it up. That is what I meant you to assume?

A. Yes.

Q. But you would assume that the blue curve from that point on, dropped to zero and then went back to approximately 110 revolutions astern?

A. I assume that the blue curve only applied to the part in which you differentiated from the white curve.

Q. Admiral Simons, we have not asked you any questions about how much a ship travels through the water from the time that you get the full astern order and the engines are full astern, until she is dead in the water. I would like to have you tell us something of what you know on that. I do not know quite enough to ask you the right question, but let us take it at different speeds about which you know, and refer your testimony particularly to the "Chicago" if you can.

(Testimony of Manley Hale Simons.)

A. It is very simple to compute this in your own mind by mental arithmetic. If you know the time which is required from emergency full speed for the ship to be dead in the water, it is then a question of mathematically determining the distance she has traveled. Let us suppose, to bring the case down more to actuality, that a cruiser shows in her tactical data, with a speed of 30 knots and 10 knots she can be brought to dead in the water on emergency full speed astern in two minutes. In other words, she would be traveling at the start of the emergency full speed astern, 30 knots. At the close of the two minutes, her mean speed for the two minutes would be 15 knots an hour. In three minutes at 15 knots an hour she would travel 1500 yards; in two minutes she would travel 1000. Therefore she would do 1000 yards in two minutes from the emergency full speed astern to dead in the water. At 10 knots by similar method of reasoning, she would have a mean speed of five knots, and her yards would be two-thirds of 500. Below 10 knots this is no longer true, as she stops in a much less period of time. [278]

Q. Have you ever had the experience of stopping the "Chicago" at a speed of five knots?

A. Yes, when we come to anchor we always have to stop the ship, just before we let go our anchor. From five knots she will stop in 36 to 40 seconds.

Q. How much yardage does it make?

A. Her mean speed would be two and a half knots, two-thirds of 250 yards, would be about 160 yards.

(Testimony of Manley Hale Simons.)

The COURT: That would not be using full steam?

A. No, it would not be, no.

Q. In that case you would not be using the emergency full speed astern?

A. There would be no use for it. If you are only traveling five knots, you would not give it full emergency, because you hardly ever have the steam to give it.

Q. If you had the steam available, if you were going into port with that power it would not take the 30 or 40 seconds?

A. At five knots, no.

Q. You could stop within two or three ship lengths?

A. You could stop within three which would be 150 yards.

Q. She could stop almost instantly?

A. She would stop almost instantly if you gave her the gun at five knots, but you hardly ever have steam to give her the gun when you are traveling at five knots.

Miss PHILLIPS: I think the court has just asked the question that I had in mind to ask you, and that is, suppose you are going at a given speed of 10 knots or 8 knots or 6 knots and you have steam available for a higher speed than is needed at that rate, what would you say as to your power to stop them?

(Testimony of Manley Hale Simons.)

A. You have certain constants which are applied to all conditions. The first constant is stopping the shaft. Another constant is the time which it takes to carry out an order that you give. These constants nearly always take up from 10 to 30 seconds. Those you [279] have to count out. On the first constant, the more steam you put into the backing turbine the faster the propellers will grind astern and the sooner the ship will stop.

Q. I think that answers what I had in mind.

Mr. LILLICK: Will you be good enough to give the time to stop at 12 knots?

A. On emergency full speed astern, the mean speed at 12 knots would be 6 knots, from 12 knots to zero. Then the time to stop provided you have some cruiser which can do it in two minutes at all speeds between 10 and 30, it would be two-thirds of 600, or 400 yards.

Q. And in that example that you have just given me, you have allowed the constants you have given me a few moments ago of the human element, and the variability as to shaft revolutions?

A. Yes, I told you this morning that in all of these experiments in which we obtained a graph, the stop watch is snapped when the order is given and the stop watch is again snapped when the ship is dead in the water.

The COURT: Q. You were not in a position on that day to say whether they had more steam available than 12 knots, are you?

(Testimony of Manley Hale Simons.)

A. On which day?

Q. On the day of the accident.

A. Yes, I am in a position to say that. I had transmitted the order to the captain of the ship that, provided he had visibility the admiral would permit him to exceed an economical speed of 12 knots in order to carry out tests of the new boiler material which was authorized by the Bureau. The "Chicago" on that date was equipped with big burners and two boilers were in use, and the condition of her bottom would permit her an easy speed of 17 knots through the water. She had the equipment to go 17 knots through the water available.

Q. In other words, up to that point she had steam available?

A. She had steam available if she desired to go 17 knots. [280]

Q. And when this order was given, do you understand that order was qualified as to what was to be used on full speed astern?

A. An emergency full speed signal in the Navy means "Give her everything you can."

Q. That is what you call "Give her the gun"?

A. Give her the gun.

Q. Give her everything you have?

A. Give her everything you have.

Q. So whatever power there was in the engines at that time, should have been given on that occasion for full speed astern?

(Testimony of Manley Hale Simons.)

A. Yes, they would much rather wreck a feed pump or blow up a boiler than have a collision.

Miss PHILLIPS: That is all.

Mr. LILLICK: That is all.

The COURT: We will take an adjournment now until Monday, March 19, 1934, at 9:30 a. m.

(An adjournment was here taken until Monday, March 19, 1934 at 9:30 o'clock a. m.)

Filed June 19, 1934. [281]

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Monday, March 19th, 1934.

JOHN RAYMOND LEEDS

called for the United States, sworn:

Miss PHILLIPS: Q. What is your full name?

A. John Raymond Leeds.

Q. What is your occupation, Mr. Leeds?

A. Ensign, United States Navy.

Q. How long have you been in the Navy?

A. Up to the time of the collision?

Q. Well, now, how long have you been in the Navy?

A. Five years and nine months.

Q. Are you a graduate of Annapolis?

A. Yes.

Q. In what class did you graduate?

A. I graduated with the class of June, 1932.

The COURT: Might I ask you whether you are asking that question because not all of the officers

(Testimony of John Raymond Leeds.)

have been. I notice you have asked that question in a number of instances, but you have not of all.

Miss PHILLIPS: I believe that I have asked that of them. Admiral Simons was asked that question, and Admiral Laning.

The COURT: There were some you did not ask that of.

Miss PHILLIPS: It was an oversight on my part if I did not.

The COURT: Have they all graduated from Annapolis?

Miss PHILLIPS: I think that an officer of the Navy, a commissioned officer is invariably, nowadays, a graduate from Annapolis; there are some exceptions where men of very marked ability can rise and become an officer.

Q. What sea experience have you had?

A. I have had two midshipmen's cruises of three months each to Europe, and I had been on board the "Chicago" for 21 months. [282]

Q. When did you go to the cruiser "Chicago"?

A. I joined the "Chicago" in San Pedro, June 30, 1932.

Q. Have you been attached to the "Chicago" since June, 1932?

A. Yes.

Q. In what capacity?

A. Under instruction.

Q. Have you had any special duties assigned to you from time to time?

(Testimony of John Raymond Leeds.)

A. Yes, the first six months I was under engineering instruction and the next three months I was a junior officer of the third division, and the following three months I was a first division officer of No. turret; the following six months I was division officer in connection with the damage control department.

Q. Were you on the "Chicago" at the time of the collision?

A. Yes, I was.

Q. Where were you stationed?

A. I was stationed as bow lookout.

Q. When did you go on duty?

A. Eight o'clock.

Q. Will you pick up on this model the point where you were stationed?

A. I was standing right about there.

Q. At the bow of the ship?

A. Yes.

Q. How many feet above the water was your position there at the bow?

A. About thirty feet.

Q. About how far from the navigating bridge?

A. About 60 yards.

Q. Can you communicate with the bridge from your station?

A. Yes, by means of the telephone.

Q. Were you at the telephone yourself?

A. No, I had a man at my side especially detailed for that particular duty.

(Testimony of John Raymond Leeds.)

Q. What were your duties at your station at the bow with respect to the bridge?

A. To note other vessels either by sound or by eye, report the same immediately, with their approximate bearing, to the bridge.

Q. What time did you relieve the man before you, ahead of you?

A. At eight o'clock. [283]

Q. Did you see any vessel on the "Chicago's" starboard side at or about the time you took your station?

A. Yes, I saw a vessel on the starboard bow. This vessel was pointed out to me by the officer that I relieved.

Q. Did you report this vessel on the "Chicago's" starboard side?

A. No, I did not report this vessel.

Q. Why not?

A. It had previously been reported by the officer that I relieved.

Q. Did you observe this vessel?

A. Yes, I did.

Q. Did you make out her color or shape?

A. She was quite clear at times, due to weather conditions, and at times I could not see her.

The COURT: What time did you relieve the other officer?

A. At eight o'clock.

Miss PHILLIPS: Q. Will you go ahead from this point, taking your station at the bow of the

(Testimony of John Raymond Leeds.)

ship, observing this vessel on the starboard side, which the other officers pointed out to you, and tell me from that point on what you saw and heard and did.

A. I kept looking at this vessel on the starboard bow, which turned out to be the "Albion Star". I could not hear her fog signals at that time, I turned my ear in order that I might pick up any signal coming from that direction, and while so doing I was looking on the port bow and noticed a ship coming out of the fog. At first all that I was able to see was her bow and her bow wave.

Q. Bow what?

A. Bow wave. As she emerged from the fog bank; I reported this immediately to the bridge, and indicated her direction by means of extending my arms. I repeated the report to assure myself that the bridge had received the same. I sighted the "Silver Palm" at a range of about 1000 yards. When she was about 500 yards I gradually receded, walked backwards, [284] and it appeared at first that the collision was going to be at the stem, but I was unable to keep astern of her beam, and I was then forward of No. 1 turret, and the "Silver Palm" hit the "Chicago" on the port bow directly opposite from where I was standing.

Q. Pick out on the model Exhibit 1 where you were standing at the moment of collision?

A. I was right about here, just on the other side of the center line.

(Testimony of John Raymond Leeds.)

Q. That is the turret?

A. Yes.

Q. Is the turret even with the keel of the ship?

A. Yes.

Q. Then you were just on the other side of No. 1 turret?

A. Yes, I was right forward of No. 1 turret at the time of the collision, and the force of the impact brought me over on the other side.

Q. Was it just behind the barrel of that gun, is that what you mean the court to understand?

A. No, I mean I was just forward of the turret itself, under the gun.

Q. Forward of the turret itself but just under the gun at the time of the collision?

A. Yes.

Q. You said that you began to walk from the bow backward. Did you observe the "Silver Palm" as you did this?

A. Well, I kept walking back slowly in order to still remain on the ship—I thought the collision was going to be at the stem, and as I walked backward her bow seemed to come on me constantly until the point of impact.

Q. Did you run?

A. No, I was not able to run, because there were anchor chains on the forecastle head and it would be impossible to run.

Q. Did you make any estimate of the "Chicago's" speed at the time of the collision?

(Testimony of John Raymond Leeds.)

A. I noticed the water at the time of the collision because the "Chicago" was given quite a list and I [285] could see the water very close to the ship and it appeared that the "Chicago" was not going ahead, that she was almost dead in the water.

Q. What was the appearance of the water that made you think that?

A. There was no noticeable motion of the ship through the water.

Q. At that moment—when did you say that was?

A. At the instant of the collision.

Q. Which direction did you look?

A. On the starboard side.

Q. Do I understand you to say your ship listed?

A. Yes.

Q. Which direction were you thrown?

A. The starboard.

Q. Forward or backward or sideways, or how was it?

A. Sideways, outboard.

Q. Mr. Leeds, did you hear any whistles blown that morning?

A. The only whistles that I heard were those blown from the "Chicago" when I relieved the watch at 8 o'clock and did not hear any whistles blown from the "Albion Star".

Q. How is that?

A. I did not hear any whistle blown from the "Albion Star" after eight o'clock.

Q. By the "Albion Star" you mean the steamer on your right?

(Testimony of John Raymond Leeds.)

A. Yes.

Q. Did you hear any whistles blown from the "Silver Palm"?

A. I heard no whistles blown from the "Silver Palm" until after the collision.

Q. Did you hear any from the "Chicago"?

A. Yes.

Q. What whistles did you hear from the "Chicago"?

A. At the time I relieved the watch I heard the "Chicago" sounding two prolonged blasts, this she did several times and then I heard one prolonged blast shortly afterwards and I heard three short blasts and a siren.

Q. You say you heard some signal from the "Silver Palm" after the collision; what signal did you hear?

A. I heard one prolonged blast from the "Silver Palm" after the collision, indicating that [286] she was going ahead.

Q. Mr. Leeds, were you listening for signals that morning?

A. Yes, that was one of my duties.

Q. Is there anything that fixes the hour of 8 o'clock in your mind as the time that you relieved the bow lookout?

A. Yes, the ship had just made eight bells when I arrived on the deck and relieved the bow lookout.

Q. You said you did not hear any whistles from the "Silver Palm", until after the collision. Is your hearing normal?

(Testimony of John Raymond Leeds.)

A. Well, I passed the physical examination for the academy and the annual examination since then for an officer in the Navy.

Q. What was the result of the last test of your hearing?

A. I took a test on the "Chicago's" whistle and was able to hear her whistle at three and a quarter miles.

Q. When was that?

A. This was on February 12.

Miss PHILLIPS: You may cross examine.

#### Cross Examination

Mr. LILLICK: Q. Where were you on the "Chicago" when you heard the eight bells strike?

A. I was on the forecastle head.

Q. You had actually arrived on the forecastle?

A. Yes.

Q. Would you say that the man whom you relieved left at that time or did he stay there a minute or two after you relieved him?

A. He stayed there long enough to point out the ship on our starboard bow, and that was all the word he had to pass on to me and he left immediately.

Q. You saw the "Albion Star" as soon as you got there at 8 o'clock did you?

A. Yes.

Q. How far away was she from you, then?

A. I estimated her range at about 1000 yards.

Q. What direction was she, what bearing from the "Chicago"?

(Testimony of John Raymond Leeds.)

A. Her bearing changed. At the time I sighted her she was about [287] broad on the starboard bow, and when she disappeared, she seemed to come in ahead, perhaps about two and a half points on our starboard bow.

Q. Some of us are not sailorwise, and when you speak of broad on the bow, would you state in degrees?

A. Broad on the starboard bow means four points on the starboard, or 45 degrees.

Q. So that when you first saw her she was on a four point bearing from the "Chicago" and then when you last saw her—

A. She was about two and a half points.

Q. How far?

A. Two and a half points.

Q. When did you hear the first two-blast signal from the "Chicago" in reference to the change of watch?

A. During the change of watch I heard two blasts.

Q. In other, as eight bells were striking and you were relieving the other man on the bow, you for the first time heard a two-blast signal on the "Chicago"?

A. It was not all simultaneous, it was a matter perhaps of only a few minutes between eight bells and my relieving the watch and the two long blasts.

Q. Would you have heard two blasts from the "Chicago" had they been blown if you were on your way up to the fore-castle head?

(Testimony of John Raymond Leeds.)

A. Yes.

Q. I am trying to get your judgment as to whether that was the first two-blast signal that was blown from the "Chicago". Do you know that?

A. No, I do not.

Q. How many other two-blast signals were blown by the "Chicago"?

A. I don't know as I could state, but I should judge I heard about three.

Q. At what intervals were those blasts blown?

A. The regulations prescribe one minute between two prolonged blasts.

Q. You were there, Mr. Leeds; do you remember whether a minute elapsed between each of those two-blast signals?

A. Well, it appeared there was a minute between the two prolonged blasts. [288]

Q. In other words, it is your recollection now that there were three two-blast signals at an interval of a minute between them?

A. Yes.

Q. And following that I understand you heard a one-blast signal from the "Chicago"?

A. Yes.

Q. How many of those one-blast signals did you hear?

A. I think I heard one, maybe two. I did not notice particularly just how many she did give.

(Testimony of John Raymond Leeds.)

Q. Would you say a minute elapsed between the last two-blast signal and the one blast to which you have just testified?

A. Yes.

Q. What followed after that one-blast signal?

A. Three short blasts.

Q. And what interval of time elapsed between the blowing of the three short blasts?

A. Perhaps a minute.

Q. And after the three short blasts?

A. Followed by the siren.

Q. At the time the three short blasts were blown how far away was the "Silver Palm"?

A. About 250 or 300 yards.

Q. In other words she had come in from the 500 yards space, where you gradually walked back, so that the three-blast signal from the "Chicago" came while you were stepping back from the fore-castle and after the time you judged that she was 500 yards away?

A. Yes.

Q. What do you mean by stating that you were unable to keep astern of her. I do not understand that.

A. Her bearing on me remained constant.

Q. So that from the time you first saw her 1000 yards off until she had come to within 500 yards her masts were about in a line?

A. Yes.

(Testimony of John Raymond Leeds.)

Q. To you she appeared as coming exactly head on did she?

A. Yes.

Q. At what bearing on the "Chicago's" bow?

A. About 40 degrees.

Q. About 20 degrees?

A. About 40.

Q. That would be between three and four points, nearer four points? [289]

A. Nearer four points.

Q. My recollection is that you said you were training your ears on the "Albion Star" and in so doing were looking to port—you had turned your head listening for the whistle, and for that reason, to this whistle to the right side, you were looking toward the port of the "Chicago"?

A. Yes that is right.

Q. How much time would you say elapsed from the time you turned your head from the "Albion Star" to listen for her signals, up to the time you saw the "Silver Palm"?

A. Perhaps a minute.

Q. When you turned your head from the "Albion Star" was she still in sight?

A. Yes, she was.

Q. At that time had she come up to two and a half points off your starboard bow?

A. No.

Q. How did you know she had got to two and a half degrees on your starboard bow?

A. I looked at her again.

(Testimony of John Raymond Leeds.)

Miss PHILLIPS: You said two and a half degrees; didn't you mean two and a half points?

Mr. LILLICK: Yes. May I have that corrected? You understood I meant two and a half points?

A. Yes.

Q. Then going over that again, you replied that you knew she had gotten to a bearing of two and a half points off the starboard bow of the "Chicago" because after you saw the "Silver Palm" you looked back at the "Albion Star"?

A. No, I looked back before I saw the "Silver Palm".

Q. Then I misunderstood you. How long after you looked back at the "Albion Star" and saw her two and a half points off of the starboard bow of the "Chicago" was it until you saw the "Silver Palm"?

A. Fifteen or twenty seconds.

Q. And when you saw the "Albion Star" two and a half points off the starboard bow of the "Chicago" how far away was she?

A. About a thousand yards. [290]

Q. Fifteen or twenty seconds after that, when you looked at the "Silver Palm", or at least saw the "Silver Palm" how far away was she?

A. About a thousand yards.

Q. At that time what was the bearing of the "Silver Palm" on the "Chicago's" port bow?

A. About two points.

Q. On one bow a thousand yards away was the "Albion Star" and on the other bow a thousand

(Testimony of John Raymond Leeds.)

yards away was the "Silver Palm"— at about two and a half points away from the "Chicago" one on the starboard bow and one on the port bow?

A. Yes.

Q. At that time, Mr. Leeds, can you tell me whether the one blast signal from the "Chicago" had been blown which followed the three signals of two blasts?

Miss PHILLIPS: Counsel has misunderstood the witness' testimony.

Mr. LILLICK: Q. How long after the one-blast signal from the "Chicago" that followed three two-blast signals to which you have testified, was it until you saw the "Silver Palm"?

A. About 15 seconds to half a minute.

Q. When you were at the bow at that time, 30 feet above the water, do you remember whether you looked over the bow to see whether the "Chicago" was still going through the water?

A. Not directly, no, but I could tell from walking a distance of perhaps 50 or 60 yards.

Q. Could you tell me whether when that first two-blast was blown from the "Chicago" she was still going through the water?

A. I could not.

Q. So you don't know whether she was stopped at that time or not?

A. No, I do not.

(Testimony of John Raymond Leeds.)

Q. Do you know whether, when the one-blast signal was given that followed those three two-blast signals, the "Chicago" was going through the water?

A. Yes, she was going through the water. [291]

Q. So that when she blew the first two-blast signal you can not tell me whether she was going through the water, but you do know after the "Chicago" had blown three of these two-blast signals she was going through the water, but when the one blast was given she was going through the water?

A. She was going through the water when the one-blast signal was blown.

Q. Refreshing your recollection, can you not tell me whether, when the first two-blast signal was blown she was dead in the water?

A. I did not see her going through the water after the first two-blast signal was given.

Q. That was up to the time the watch was being changed?

A. Not exactly that instant, but perhaps a second or two afterwards.

Q. So that when you came to the bow and changed watch with the other bow lookout you do not know whether the "Chicago" was going through the water or not?

A. No, not right at that instant, I do not know.

Q. When did you, between that time and the blowing of the one-blast signal, find out that she was going through the water?

(Testimony of John Raymond Leeds.)

A. Right after I relieved the watch I saw she was going through the water.

Q. Would you say it was before the second two-blast signal was blown?

A. Yes.

Q. How fast was she going through the water?

A. I made no estimate of her speed at that time.

Q. You say you made no estimate of her speed?

A. No.

Q. So that she was going through the water on the second signal of two blasts. Was she going through the water on the third signal of two blasts?

A. Yes.

Q. Proceeding ahead?

A. Yes, very slowly.

Q. How far back from the stem looking straight ahead did your [292] duties as bow lookout that morning, call upon you to report to the bridge, from what point straight ahead to what point on either side?

The COURT: In other words, how far from the jack staff?

A. I was to report any vessel sighted or any sound heard from any point.

Mr. LILLICK: Q. So that over the whole port side and over the whole starboard side it was your duty to report anything seen or heard?

A. Yes.

Q. That called upon you, then, to cover as much of the horizon about the "Chicago" from your point of view as you could?

(Testimony of John Raymond Leeds.)

A. Yes.

Q. Was the fog on the port side of the "Chicago" at the time you first saw the "Albion Star" as heavy as it was on the starboard side?

A. It was a little heavier on the port side than it was on the starboard side.

Q. How was it ahead? You say that the "Albion Star" was two and a half points off of the starboard bow and the "Silver Palm" two and a half points off the port bow, approximately 1000 yards away, with an interval of 15 seconds between the time you looked at them. Would you say that the fog was about 1000 yards away dead ahead?

A. Yes.

Q. How many times have you stood lookout Mr. Leeds, just approximately, during the time you have been at sea?

A. Well, actual experience, I have stood about ten watches on lookout, and I also received training in the Academy.

Q. From your actual experience at sea during the ten watches that you have stood have you ever been on watch when the whistle upon the vessel upon which you were acting as lookout blew, the whistle had sounded at the same time as the whistle of another vessel that was blowing?

A. I never recall any such instance.

Q. So that you have never been on watch when the whistle of the [293] vessel upon which you were

(Testimony of John Raymond Leeds.)

standing watch had been blown at the same time as another vessel's whistle had been blown?

A. I don't remember it.

Q. You would not be able to hear the whistle of another vessel, if the vessel upon which you were had blown her whistle at the same time that another vessel was blowing her whistle?

A. I don't know, I never have had any experience.

Q. What is your opinion?

A. My opinion is you can hear it.

Q. Your opinion is, you could hear it?

A. Yes, it would be a different sound.

Q. What was your estimate of the speed of the "Chicago" at the time you saw the "Silver Palm"?

A. I did not make any estimate of the time but I would say approximately it was about seven to eight knots.

Q. You say you did not make an estimate of it at the time. Have you made an estimate since?

A. No, merely from recollection of what was going on at the time, by observation of our speed through the sea.

Q. Do you remember testifying before the court of inquiry, Mr. Leeds, that you estimated the speed of the "Chicago" at the time you saw the "Silver Palm" as five knots?

A. Yes, I did.

Q. You have changed your mind since about that, have you?

A. I have.

(Testimony of John Raymond Leeds.)

Q. Could you see the "Albion Star" all the time from the time she first was called to your attention until you looked away from her?

A. No. When I looked from her she disappeared in a fog bank.

Q. And during that time she was off at a distance of 1000 yards?

A. Well, she was going—evidently she did not remain the same distance of 1000 yards.

Q. Closer to you than a thousand or farther away than a thousand?

A. Farther away than a thousand, she was pulling ahead of us.

Q. So that from the time you went on watch at 8 o'clock until you last saw her, she had pulled away from you?

A. Yes. [294]

Q. When you heard the three blasts of the "Chicago's" whistle, indicating that the "Chicago" was going full speed astern, what distance from the "Chicago" was the "Silver Palm"?

A. Hearing the three-blast signal, feeling the ship shaking as an indication that the engines were going astern, I estimate the distance to be from the "Silver Palm" at about 100 yards.

Q. You are basing that estimate from, not your visual reaction, but upon a judgment from the "Chicago's" shaking: Is that clear?

A. No, it is not.

(Testimony of John Raymond Leeds.)

Q. You are basing your reply that she was 100 yards away upon your recollection of the "Chicago's" shaking, are you?

A. I had to be at a position of observation in order to make observation of the range.

Q. Then from your actual observation, when you heard the three blasts of the "Chicago's" whistle, indicating that the "Chicago" was going full speed astern, at what distance from the "Chicago" was the "Silver Palm"?

A. About 100 yards.

Q. Was the "Silver Palm" in the fog and just coming out of it when you first saw her?

A. Yes, she was.

Q. You are certain that you heard no signal from the "Silver Palm" until after the collision?

A. Yes, I am.

Q. When you last saw the "Albion Star" did she seem to be on a course paralleling that of the "Chicago"?

A. No, she seemed to be on a course of 20 degrees to the left of the "Chicago".

Q. In other words, converging across the "Chicago's" bow from starboard to port?

A. Yes.

Q. During the interval that elapsed before the collision, did the "Chicago" ever get on a course that paralleled the course of the "Albion Star"?

A. I never observed such a course.

(Testimony of John Raymond Leeds.)

Q. When you say that you could see the water very close to the "Chicago" at about the time of the collision, I think you said that [295] the "Chicago" seemed to be dead in the water. Was that what you intended to convey?

A. Yes.

Q. At that time did you look over the side for the purpose of seeing whether the "Chicago" was still going ahead?

A. No, I did not.

Q. And yet you told me that you remember looking over the side and that she was dead in the water?

A. Yes, sir.

Q. Is that right?

A. That is right.

Q. And you now say that she was dead in the water at about the time of the collision?

A. Yes.

Q. When you fixed the distance of the fog ahead on the port and on the starboard bow can you give me an estimate now of which was farthest away?

A. At that time it was about the same.

Mr. LILLICK: That is all.

#### Redirect Examination

Miss PHILLIPS: Q. Mr. Leeds, on what point of the ship did you come to take up your duties as bow lookout?

A. I can best tell that by the model. I came through the door right on the starboard side here and walked forward on the starboard side.

(Testimony of John Raymond Leeds.)

Q. That is a door near that forward gun turret?

A. That is the door right there.

Q. You came out of that door?

A. Yes.

Q. I would like to have you take the two models and illustrate to the court if you can the angle at which you saw the two ships. Now perhaps it would be better to tell me to step one way or the other, that is when you first sighted the "Silver Palm".

A. You can stand still and I can move, just about like that.

Q. About like that?

A. Yes.

Mr. LILLICK: May I ask a question?

Miss PHILLIPS: Yes.

Mr. LILLICK: Q. What angle off the port bow of the "Chicago" would you say that angle is now? [296]

A. About two points.

Miss PHILLIPS: Q. From that position could you see either side of the "Silver Palm"?

A. I could see both sides.

Q. You could see both sides?

A. Yes.

Q. Were the masts right in line?

A. The masts appeared to be right in line.

Q. Are you referring now to the time you first saw her or to the time after you saw her and saw her emerge?

A. At the time I first saw her, she was not very clear, I could see only her bow, bow wave, and her

(Testimony of John Raymond Leeds.)

foremast very dimly. Afterwards, when she emerged from the fog bank I could see her more distinctly, and at that time I noticed her masts to be in line.

Q. I will ask you to measure on the model the distance in inches from the point you were standing to the point where you wound up at the moment of the collision. This model is drawn to a scale of one sixteenth of an inch to the foot. Measure it in inches.

A. About six and three-eighths inches.

Q. About six and three-eighths inches?

A. Yes.

Q. About six and three-eighths inches from the point you were standing?

A. Yes.

Q. You were asked some questions about the course of the "Silver Palm". You were asked what was the course of the "Silver Palm" when you last saw her. What was your answer to that?

A. The course of the "Silver Palm"?

Q. What was the course of the "Albion Star" at the last time you saw her?

A. She appeared to be 20 degrees to the left of our course.

Q. What are you referring to, her course prior to the collision or after the collision?

A. I did not see her after the collision.

Q. When was the last time that you recall glancing at the "Albion Star"?

A. About 15 seconds before I saw the "Silver Palm", just as she emerged into a fog bank. [297]

Q. Which vessel emerged?

(Testimony of John Raymond Leeds.)

A. The "Albion Star" was emerging into a fog bank.

Q. Are you speaking of emerging into a fog bank?

A. She was disappearing into a fog bank.

Q. Mr. Leeds, where were you standing at the time that the "Chicago" sounded her first three-blast signal that you recall?

A. I was standing right about there I should say when she sounded her first three-blast signal.

Q. "There" does not indicate in the record. About how far from the point where you finally fetched up at?

A. It would be best to measure that in inches.

Q. You did not measure it in inches at the time, you can only give an estimate as best you can.

A. About 20 yards from my station.

Q. Mr. Leeds, were you in any expectation that morning that the "Silver Palm" would head anywhere near where you were standing?

A. Yes, she seemed to head exactly where I was standing.

Q. She seemed to be heading right at you personally?

A. Yes.

#### Recross Examination

Mr. LILLICK: Q. I would like to have you, if you will, place these two models on a slip of paper, we will call the large one the "Chicago" and the small one the "Silver Palm"; place them in the position which best represents to you the example

(Testimony of John Raymond Leeds.)

given a few moments ago, with the two models, with the "Silver Palm" two and a half points——

A. Two points.

Q. (Continuing) ——two points off the port bow of the "Chicago" and when you first saw her. Can you do that?

A. Yes.

Q. Will you, with a pencil, draw around those?

A. Yes.

Q. Will you take the smaller model and place it on the diagram at the bearing which you say the "Albion Star" was 15 or 20 seconds before you saw the "Silver Palm"?

Miss PHILLIPS: Might I suggest that a different sheet of [298] paper be used for that purpose.

Mr. LILLICK: I want it on the same sheet of paper.

Miss PHILLIPS: Don't you think it is misleading?

Mr. LILLICK: Not at all, if we read it with the witness' testimony that the two vessels were 1000 yards away. That is the reason I want it.

Miss PHILLIPS: The reason I suggest that is, the witness testified that the last time he saw the "Albion Star" she was disappearing into a fog bank. Counsel is suggesting now that he place the "Albion Star" on that sketch as she appeared to him before she disappeared in the fog bank, and he is locating the "Silver Palm" on the same sketch at a later interval.

(Testimony of John Raymond Leeds.)

The COURT: Twenty seconds.

Mr. LILLICK: Fifteen or twenty seconds. It is a matter of mathematical computation.

The COURT: So that it won't be confusing, with the understanding that something could happen in 20 seconds, a change of direction, etc.

Mr. LILLICK: Now will you draw around those two models?

The COURT: You had better mark the names of the vessels.

Mr. LILLICK: Q. Do I understand this properly, Mr. Leeds: I am assuming that this diagram indicates the "Chicago" with the "Albion Star" in a relative bearing to the "Chicago" that she was when you last saw her disappearing in the fog bank, and some 15 or 20 seconds later you saw the "Silver Palm"?

A. Yes.

Q. About a thousand yards away?

A. Yes.

Q. Will you please draw the line and put 1000 yards on it? And also, for the purpose of clarification, the relative positions of the "Chicago" and the "Silver Palm" as you have indicated, with the "Silver Palm" two points off of the "Chicago's" port bow at a distance of 1000 yards, 15 or 20 seconds after you saw the "Albion Star" in [299] the position indicated on the diagram?

A. Yes.

(Testimony of John Raymond Leeds.)

Q. Mr. Leeds, when did you come to the conclusion that a collision between the "Silver Palm" and the "Chicago" was inevitable, as far as distance the "Silver Palm" was away from you?

A. A person not only depends on distance, but depends on speed and course.

Q. Then put it this way, Mr. Leeds. How far away from the "Chicago" was the "Silver Palm" when you came to the conclusion that a collision was inevitable between the two ships?

A. It appeared a collision was inevitable at the time the "Chicago" backed full speed astern.

Q. How far away was the "Silver Palm" at that time?

A. 100 yards.

Q. 100 yards?

A. Yes.

Q. Why did you commence to step back from your position on the forecastle head when the "Silver Palm" was 500 yards away?

A. Because a collision seemed to be imminent at that point.

Q. But not yet inevitable?

A. No.

Mr. LILLICK: May we offer this in evidence as our next exhibit?

The COURT: It will be received as Respondent's Exhibit No. 5 in evidence.

(The document was marked "Respondent's Exhibit No. 5".)

(Testimony of John Raymond Leeds.)

Further Redirect Examination

Miss PHILLIPS: Q. Mr. Leeds, if there had been any change of course by the "Chicago" between the time you have sketched the position of the "Albion Star" on that exhibit, and your sighting of the "Silver Palm", would that make the relative bearings as you have sketched them, correct or incorrect—if the "Chicago" changed course? Is my question clear?

A. No, it is not.

Q. You have sketched the position of the two vessels sighted by you at different times. Do you know whether the "Chicago" had made any change of course, or was changing course during this time?

A. No. [300] I could not perceive any change of course up in the bow. There was no permanent or fixed object by which to check the bearing.

Q. That is, from your position at the bow you could not perceive a change of course of the "Chicago"?

A. No.

Q. My question is, suppose there had been a change of course, or if the "Chicago" in fact changed her course during this interval between your sighting of the "Silver Palm" and your previous sighting of the "Albion Star" would the relative bearings shown on that sketch be correct?

A. No.

Mr. LILLICK: Q. But the bearings were correct at the time I asked you, were they?

(Testimony of John Raymond Leeds.)

A. To my observation at that time, it would be 15 or 20 seconds interval between the time.

Mr. LILLICK: That is all.

Miss PHILLIPS: That is all.

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FRED CONNARN,

called for the United States, sworn:

Miss PHILLIPS: Q. Will you please give your full name?

A. Fred Connarn.

Q. Mr. Connarn, please speak up, it is rather a noisy room; it is hard to hear. What is your occupation?

A. Seaman.

Q. In whose employment?

A. The Navy.

Q. What navy?

A. The United States Navy.

Q. How long have you been in the Navy?

A. Five years and four months.

Q. Are you attached to any ship?

A. The U. S. S. "Chicago".

Q. When did you join the "Chicago"?

A. 1931, when she first went into commission.

Q. Were you on the "Chicago" at the time of the collision with the "Silver Palm"?

A. Yes.

Q. When did you go on duty?

(Testimony of Fred Connarn.)

A. At quarter of eight.

Q. Where were you stationed?

A. On the forecastle. [301]

Q. On the forecastle?

A. Yes.

Q. Will you point out on the model your position?

A. Right here.

Miss PHILLIPS: The witness points to a position just back of the deck staff, a few feet.

Q. Do you remember the man to whom you reported?

A. I reported to the officer of the deck.

Q. Do you remember what officer was there?

A. Mr. Leeds, I reported to him and he told me to report to the officer of the deck.

Q. Where was the officer of the deck stationed?

A. On the bridge.

Q. You went to the bridge then?

A. No. I had the ear phones on.

Q. You reported to the officer of the deck by means of telephone?

A. Yes.

Q. Is that right?

A. Yes.

Q. Now how was this telephone arranged, will you tell me?

A. I had a wire coming from here, and another man on the bridge had ear phones on.

Q. A wire from where?

A. From here to there.

(Testimony of Fred Connarn.)

Q. Over on the port side of the ship?

A. Yes.

Q. Is there a portable telephone from where you were standing?

A. Yes, there is a socket there.

Q. That is connected with the bridge?

A. Yes.

Q. Did you have ear phones on?

A. Yes.

Q. So that you could hear what he said?

A. Yes.

Q. Can you talk to the man on the bridge?

A. Yes.

Q. How?

A. There is a mouth piece with a little button on it, and you push that button.

Q. What were your duties at your station?

A. To keep a sharp lookout and report to the bridge.

Q. Were you taking any immediate instructions from anybody in the neighborhood, anybody instruct you?

A. Mr. Leeds.

Q. What was Mr. Leed's position?

A. He was lookout too.

Q. How far was he standing from you?

A. Right by my side. [302]

Q. Did you report any steamer that morning?

A. Yes, on the starboard bow first.

(Testimony of Fred Connarn.)

Q. You reported a steamer seen on the starboard bow?

A. Yes.

Q. Did you report any other steamer?

A. I reported the "Silver Palm". They were the only two I reported.

Q. Where was the "Silver Palm"?

A. On the port bow.

Q. Did anybody tell you to report a steamer on the port bow?

A. I reported to Mr. Leeds, I could not see the steamer at first, all I could see was the form of the bow, and I asked Mr. Leeds, was that a ship, and he said "Yes", reported to the bridge right away, and I reported it right away.

Q. Did you have any other duties there at the bow in addition to reporting to the bridge?

A. No.

Q. No other duties?

A. I was just to keep a sharp lookout.

Q. Going back to the steamer that you say you reported on the starboard side, do you remember when you reported that steamer?

A. I reported it about ten minutes before I sighted the "Silver Palm".

Q. Before you reported the "Silver Palm"?

A. Yes.

Q. Are you sure that the officer that was there with you at the time you saw the steamer on your starboard was Mr. Leeds?

A. Yes.

(Testimony of Fred Connarn.)

Q. Do you remember who was the officer there at the bow prior to Mr. Leeds's coming on duty?

A. Mr. Braun.

Q. How do you spell it?

A. I don't know.

Q. How do you happen to know Braun was there before Leeds?

A. I was on watch with him before Mr. Leeds relieved him.

Q. How long were you there when Braun was there?

A. About 15 minutes.

#### Cross Examination

Mr. LILLICK: Q. How do you spell your name?

A. C-o-n-n-a-r-n.

Q. Mr. Connarn, when you went on watch at 7:45 was it foggy?

A. Yes. [303]

Q. Were the fog signals blowing on the "Chicago"?

A. Yes.

Q. Did the fog get thicker after you went on, or did it commence to pass away?

A. It seemed about the same.

Q. How far could you see ahead?

A. I could not estimate, I could not tell you, not very far.

Q. About how far do you think the "Silver Palm" was when you saw her?

A. I don't know.

(Testimony of Fred Connarn.)

Q. Have you no knowledge of the distance at all?

A. No.

Q. How far away was the "Albion Star" when you sighted her?

A. I could not say.

Miss PHILLIPS: Speak up so that I can hear you.

A. I don't know.

Mr. LILLICK: Q. Was the "Silver Palm" as close to the "Chicago" when you first saw her as the "Albion Star" had been?

A. No.

Q. How close had the "Albion Star" come to the "Chicago"?

A. I don't know.

Q. You only know that the "Silver Palm" looked to you as if she was farther away?

A. No, it looked closer.

Q. You mean that the "Silver Palm" looked closer.

A. Yes.

Q. The fog was thicker in the direction from which she was coming then?

A. No, it was just the same.

Q. Would you say that the fog had the same density all around?

A. Yes.

Q. And do you remember whether the fog was low enough to obscure the foretop lookout?

A. I do not get what you mean.

(Testimony of Fred Connarn.)

Q. There was a lookout in the foretopmast was there not?

A. Yes there was.

Q. Do you remember looking back and up at him?

A. No.

Q. You don't remember whether you could see the top of the foretop?

A. No, I did not look back.

Q. As I understand you, it was you who called Mr. Leeds' attention [304] to the "Silver Palm"?

A. Yes.

Q. He had not seen it—

Miss PHILLIPS: Just a minute; that is assuming something the witness could not possibly know and I object to it on that ground. I object to it, as to the form of the question.

The COURT: He might not have expressed seeing it.

Mr. LILLICK: Q. In which direction was Mr. Leeds looking when you told him, when you said to him "Is that a ship"?

A. He was looking forward.

Q. He was looking forward?

A. Yes.

Q. Was it in the same direction?

A. He was looking over at the ship on the starboard.

Q. As a matter of fact you were watching that ship on the starboard very closely, were you not?

A. Yes.

(Testimony of Fred Connarn.)

Q. Then there was a dangerous situation of the vessel off on your starboard bow, crossing your course, was there not?

A. Yes.

Miss PHILLIPS: That is objected to. The witness has not testified to anything of that sort, and it is not cross examination, and in the third place, I do not believe this witness is qualified to give an opinion on whether or not the two vessels were on dangerous courses.

Mr. LILLICK: I think it is proper cross examination.

The COURT: I think that last objection may be good, that he might not be qualified to know whether that was a dangerous course or not, unless he would be able to tell whether it was an intersecting course.

Mr. LILLICK: The "Albion Star" was proceeding on a course that was across the "Chicago's" bow from starboard to port, was it not?

A. I could not tell, she was crossing our bow; it seemed she was going in the same direction.

Q. As though they were on parallel courses?

A. The same course. [305]

Q. When you first saw the "Albion Star" it seemed that you were overtaking her?

A. No.

Q. What do you think about it?

A. She was going ahead of us. When I was watching she was going out of sight.

Q. Then you think from the time the "Albion Star" first came into the sight of the "Chicago" the

(Testimony of Fred Connarn.)

“Albion Star” was going faster than the “Chicago”?

A. Yes.

Q. How long after you heard the “Albion Star” whistle was it until you saw her?

A. I heard her whistle before I saw her.

Q. You say you did?

A. Yes.

Q. You came on watch at 7:45?

A. Yes.

Q. Did you hear her whistle then?

A. No, not right away.

Q. When did you hear her whistle?

A. When I was on watch, about ten minutes, I think.

Q. After you heard this whistle, what bearing did it seem to be on, from the “Chicago”?

A. It would be about two points off the star-board bow.

Q. How many whistles did you hear before you finally saw her?

A. I did not hear very many.

Q. Would you say five or ten?

A. I did not count them, I don't know.

Q. I beg your pardon?

A. I did not count them.

Q. You say “not very many.” I want to know what you mean by “not very many.”

A. About every minute they were blowing fog whistles.

(Testimony of Fred Connarn.)

Q. They blew every minute, but how many of those whistles every minute did you hear from her before you saw her. I only want your recollection.

A. I would say about seven.

Q. Was Mr. Leeds on watch when you reported the first whistle from the "Albion Star"?

A. No.

Q. It was Mr. Braun who was there with you?

A. Yes.

Q. How long before Mr. Leeds came on to watch did you hear that first whistle?

A. He came on watch about five minutes later.

[306]

Q. In other words, you had heard that whistle from the "Albion Star" for about five minutes before Mr. Leeds came on watch?

A. Yes.

Q. Did you see the "Albion Star" before Mr. Leeds came on watch?

A. Before Mr. Leeds came on watch.

Q. So that when Mr. Leeds came up the "Albion Star" was in plain sight?

A. No, we first saw the stern of it, it was not very plain.

Q. How do you account for your being able to see the "Albion Star" after you had heard her whistle, if she was going faster than the "Chicago"?

A. I don't know, but I could see the stern of it.

Q. You testified that in your opinion the "Albion Star" was going faster than the "Chicago"?

A. Yes.

(Testimony of Fred Connarn.)

Q. If the "Albion Star" had been going faster than the "Chicago" how do you account for your having heard her whistle and then saw her?

A. She pulled away, when I seen her and she disappeared.

Q. Then, as I understand you, you were, up to the time when you saw her going faster than she was, and then she pulled away from you afterwards, is that right?

A. Yes.

Q. Tell me what you said to Mr. Leeds when you first saw the "Silver Palm"?

A. I seen the form of the bow, I could see the port side of the bow and I asked Mr. Leeds "Is that a ship out there?" and he said "Report it to the bridge right away" and I reported to the bridge.

Q. Do you know whether he saw it at the same time you did?

A. No, I don't know.

Q. In any event you called his attention to it?

A. Yes, right away.

Q. You have no idea of the distance then?

A. No, I couldn't estimate it.

Q. How long have you acted as lookout?

A. Five years.

Q. During that five years acting as lookout, have you never reported seeing an object while you were on lookout and saying how far off?

A. I never estimated the distance, but I reported a lot of ships and stuff while I have been on the ship. [307]

(Testimony of Fred Connarn.)

Q. It was foggy overheard that morning was it not?

A. Yes, it was pretty foggy.

Q. You could not see the sun?

A. No.

Q. You had not been able to see the sun from the time you came on duty at 7:45?

A. No.

Q. Did you hear the signals of the cruisers following you that morning after you went on deck?

A. Yes.

Q. You could hear them right up to the time you heard the whistle from the "Albion Star" could you?

A. Yes.

Q. You could not see them, they were behind you lost in the fog?

A. Yes.

Q. When you saw the "Silver Palm" it took an appreciable time for her to come out of the fog, did it?

A. A matter of seconds.

Q. A matter of seconds?

A. Yes.

Q. Yet you have no idea how far away she was?

A. No.

Q. How long is the "Chicago".

A. Six hundred feet and three inches.

Q. How many lengths of the "Chicago" away was the "Silver Palm" when you first saw her?

(Testimony of Fred Connarn.)

A. I could not say.

Miss PHILLIPS: That is objected to as requiring the witness to give an estimate of the distance that the witness has repeatedly said he could not do, and I object to that as asked and answered.

The COURT: He has said that he could not say.

Miss PHILLIPS: I was making the objection at the time the witness answered.

Mr. LILLICK: Q. Is it because you are not willing to tell me how many ship lengths away the "Silver Palm" was when you first saw her, or is it because you don't remember?

A. I couldn't tell you, I don't know. I couldn't estimate a thing like that.

Q. So that it is your testimony that though the "Chicago" is 600 feet long, you don't know whether the "Silver Palm" was one [308] length of the "Chicago" or 20 lengths away?

A. No.

Q. You don't know whether she was one length away or 100?

A. No.

Q. You don't know whether she was one length away or 1000?

A. No.

Mr. LILLICK: That is all.

#### Redirect Examination

Miss PHILLIPS: Q. Mr. Connarn, do you recall how many whistles you heard from the "Albion Star" all told, I mean from the first one you heard

(Testimony of Fred Connarn.)

to the last one? How many did you say you heard, or do you remember?

A. About seven.

Q. Counsel said something about the cruisers astern, if you could hear their whistles, and I believe he asked whether they were lost in the fog. Could you see from your position on the bow back of you, astern of the "Chicago"?

A. No.

Q. Why not?

A. The fog.

Q. Was there any obstruction to your view?

A. The turret.

The COURT: Q. Your duties required you to keep looking ahead didn't they?

A. Yes.

Miss PHILLIPS: That is all.

Mr. LILLICK: That is all.

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WILFRED L. LEMIRE

called for the United States, sworn:

The COURT: We will take a recess for not less than ten minutes.

(After recess.)

Miss PHILLIPS: Q. Will you please give your full name?

A. Wilfred Leo Lemire.

Q. Mr. Lemire, what is your occupation?

A. I am a seaman first class.

(Testimony of Wilfred L. Lemire.)

Q. A seaman first class?

A. Yes.

Q. In whose employ?

A. The United States Government. [309]

Q. Are you in the Navy?

A. Yes.

Q. How long have you been in the Navy?

A. I have been in the Navy five and a half years.

Q. Are you attached to any ship?

A. Yes, U.S.S. "Chicago".

Q. How long have you been attached to the "Chicago"?

A. Since April 27, 1932.

Q. Were you on the "Chicago" when she had a collision with the "Silver Palm"?

A. Yes.

Q. Were you on duty?

A. Yes.

Q. Where were you stationed?

A. On the foretop as lookout.

Q. As foretop lookout?

A. Yes.

Q. Will you pick out on the model your position on that ship?

A. Right here.

Miss PHILLIPS: The witness points to the tripod—the foretop of the "Chicago".

Q. What time did you go on duty that morning?

A. I came on duty at 7:45.

Q. What were your duties?

(Testimony of Wilfred L. Lemire.)

A. My duties were to keep the lookout and report anything within sight or hearing.

Q. Do you know how far up your position is, let us say from the deck?

A. No.

Q. You were then up at the foretop?

A. Yes.

Q. How can you report anything that you hear or see from that position?

A. I report through a voice tube.

Q. Through a voice tube you report to whom?

A. Report to the officer of the deck.

Q. To the officer of the deck?

A. Yes.

Q. Mr. Lemire, did you see any ships that morning when you were on duty?

A. I saw a ship on the right hand side

Q. You saw a ship on the right hand side?

A. Yes, on the starboard side. [310]

Q. Let us call that ship the "Albion Star". Do you recall how long before the collision you saw that ship?

A. I saw it only a few minutes before the collision.

Q. From your position could you see the man at the bow, the bow lookout?

A. No, I could not see him.

Q. You could not see him?

A. No.

Q. When you saw that ship on your right hand, you say a few minutes before the collision, did you report it?

(Testimony of Wilfred L. Lemire.)

A. No I did not report it.

Q. Why not?

A. Well, I saw it about the same time as I figured the officer of the deck, as the siren blew.

Q. That is, you saw the "Albion Star" about the same time that the siren blew, is that right?

A. No.

Q I am not understanding you. you talk in such a low voice.

A. I saw the "Albion Star" on the right, on the starboard side, and I saw the "Silver Palm" just as the whistle blew, just before that.

The COURT: You mean the collision whistle?

A. Yes.

Miss PHILLIPS: Q. You saw the "Silver Palm" about the time the "Chicago's" siren blew, is that right?

A. Yes.

Q. Did you see the "Albion Star" before or after you saw the "Silver Palm"?

A. I believe I saw her afterward.

Q You saw her afterward?

A. Yes.

Q. Did you hear any whistles that morning?

A. Yes, I heard them.

Q. Tell us about what whistles you heard.

A. I heard whistles from the starboard side only.

Q. Did you report that whistle?

A. No.

Q. Why not?

A. Because the bow lookout had.

(Testimony of Wilfred L. Lemire.)

Q. The forward lookout had already reported it?

A. Yes.

Q. How did you know he had reported it?

A. Before I came up they were pointing that they had heard a whistle, with their hand.

Q. You saw him point, is that right?

A. Yes, saw somebody pointing toward that direction. [311]

Q. Is that a custom on your ship, of a person sighting a ship to point?

A. No, we are supposed to tell the degrees, the bearing of the ship.

Q. Mr. Lemire, did you ever hear any whistle from the ship on your left?

A. No.

Q. You never heard any whistle?

A. No.

Q. Did you hear any whistles from the "Chicago"?

A. Yes.

Q. What whistles did you hear from the "Chicago"?

A. Well, they were sounded continuously through the fog, and I heard a stop signal and backing signal.

Q. Do you remember the order in which you heard them? Can you tell us now about the order in which you heard all the whistles?

A. Well, I can't remember as to the order that they came.

(Testimony of Wilfred L. Lemire.)

Q. You don't remember the order?

A. No.

Miss PHILLIPS: You may cross examine.

#### Cross Examination

Mr. LILLICK: Q. You said, Mr. Lemire, that you could not see the man at the bow. Was it because it was so foggy that you could not see him?

A. Well, I don't know. I didn't notice. I might have been able to see him but I just can't remember.

Q. It was foggy around you in the foretop was it not?

A. Yes.

Q. Did you look down at the deck at all?

A. No, I was looking around.

Q. It was foggy was it not, between you and the deck?

A. Yes.

Q. The fog was around you and around the vessel so that it was between you and the deck?

A. It was foggy around.

Q. Foggy around you?

A. Yes.

Q. As I understand you, you did not see the "Albion Star" until you saw the "Silver Palm"?

A. Yes.

Q. And you saw the "Silver Palm" for the first time about the time the siren blew on the "Chicago"?

A. Yes. [213]

Q. How far away would you say the "Silver Palm" was when you first sighted it?

(Testimony of Wilfred L. Lemire.)

A. I would say about 600 yards.

Q. When the "Silver Palm" was 600 yards away it is your testimony that the "Chicago" blew her siren?

A. Yes.

Q. I think you said that before you got up there they were talking about whistles from the ship on your starboard bow; is that right?

A. Yes.

Q. What time did you start to go up to the foretop?

A. I was up there at 7:45.

Q. Does the ladder lead up to the foretop, or are there cleats on the mast?

A. There is a ladder that leads up right in there.

Q. Before you started up that ladder you had heard there was a whistle on your starboard bow?

A. Yes, I have got to go up to the bridge and get orders.

Q. While you were crossing the bridge you heard them talking about the whistle on the starboard bow?

A. Yes, I heard a whistle mentioned.

Q. Was that 7:45, or did you get into the foretop about 7:45?

A. I got into the foretop about 7:45.

Q. So that it was before 7:45 that they were talking about this whistle on the starboard?

(Testimony of Wilfred L. Lemire.)

A. About half a minute.

Q. I suppose when you got up to the foretop you looked in the direction from which you had heard these whistles coming?

A. Yes.

Q. Could you see anything?

A. I could not see nothing, no.

Q. Why not?

A. It was too foggy.

Q. So that from then on you did not see the "Albion Star" until the siren blew?

A. Yes, just after that.

Q. How far away was the "Albion Star" from you then?

A. I could not estimate the distance.

Q. As far away as the "Silver Palm" was?

A. I could not tell.

Q. From your position on the foretop you could tell the bearing of [313] the "Silver Palm" when you saw her, could you?

A. Yes.

Q. What would you say that her bearing was?

A. Her bearing was about one or two points on our bow.

Q. On your port bow?

A. On our port bow.

Q. Can you tell me how long after that it was until you saw the "Albion Star" or how long before that it was that you saw the "Albion Star"?

A. Well, that was just about a minute before.

(Testimony of Wilfred L. Lemire.)

Miss PHILLIPS: I do not think the witness finished. It is very hard to hear. I do not know why he speaks in such a low tone of voice.

A. When I saw the "Albion Star" it was about a minute before the whistle siren blew.

Mr. LILLICK: On what bearing was she then to the "Chicago"?

A. She was on the starboard beam.

Q. You don't know how far away?

A. No.

Q. Did the whistle that you heard after you got up on the foretop seem to be coming from the starboard bow and gradually going back, indicating that the "Chicago" was catching up with the "Albion Star"?

A. I located the whistle coming off the starboard beam, but I could not tell from what direction it was.

Q. When you got up in the foretop at 7:45 you would say that the "Albion Star" was practically on your starboard beam?

A. Yes, she was about that.

Q. Now, as I understand you, though you heard the whistle of the "Albion Star" and though you saw the "Silver Palm" and though you thereafter saw the "Albion" at no time while you were in the foretop did you report anything to the officer of the deck?

A. No, I did not report nothing.

(Testimony of Wilfred L. Lemire.)

Q. So that from the time you went on duty until the time of the collision, you made no report to the officer of the deck?

A. No.

Q. How many feet is it from the foretop where you were on lookout to the navigating bridge of the "Chicago"?

A. I don't know. [314]

Q. You have no judgment of that distance at all?

A. No.

Q. You don't know whether it is 100 feet or 10 feet?

A. No—I would say it is about 50 feet.

Q. It is about 50 feet?

A. Yes.

Q. It was foggy on the bridge too, was it not?

A. Yes, it was foggy.

Q. Fog was going over the "Chicago" from the time you were there at 7:45 so that it was from your position on the foretop drifting between you and the bridge?

A. Well, I don't remember what direction it was drifting.

Q. But it was there, in any event?

A. It was there.

Q. Could you see the men on the bridge, or were they just vague outlines?

A. I could not see nobody on the bridge.

Q. Was that because of the roof on the bridge?

(Testimony of Wilfred L. Lemire.)

A. No, you are inside there, you look out this window, and you would have to look over the window to see down on the bridge.

Q. But between you and these windows there was fog, was there not?

A. Yes.

Q. You have no recollection whatever as to the order in which the whistles from the "Chicago" were blown?

A. No. I heard them blowing the regular fog signal and then stop. That is all. I don't know the other ones.

Q. Did the whistle from the siren come after the stop signal or before?

A. I don't remember.

Q. Could you tell in the foretop which way the "Chicago" turned, if she did turn, after the siren?

A. Yes.

Q. Which way did she turn?

A. It seemed like she was turning to starboard.

Q. In which direction?

A. Starboard, right (pointing).

Q. Did you see her change her course to the left, to port, before she turned starboard?

A. No.

Q. You don't know whether the "Chicago" changed her course, then, [315] while you were in the foretop and before she turned right?

A. No.

(Testimony of Wilfred L. Lemire.)

Q. How long after she turned sharp to the right was it until the two boats came together?

A. It was not long.

Q. A minute?

A. I don't know.

Q. You have no judgment with respect to the time, then?

A. No, I was too excited.

Q. You knew that something was going to happen, did you?

A. Yes.

Q. Could you hear the whistles of the cruisers after you?

A. No, I don't recall.

Q. Is it because you don't remember?

A. I just don't remember.

Q. Did you notice any change of course of the "Silver Palm" at any time before the collision?

A. Well, when I seen her coming she turned to her port.

Q. Would you say that was a sharp turn to her port, or did she gradually fall off to port?

A. No, it seemed like she was making a sharp turn.

Q. How far away from you was she then?

A. She seemed about 600 yards.

Q. You heard no whistles from the "Silver Palm" at all?

A. No.

(Testimony of Wilfred L. Lemire.)

Q. Did you hear a whistle from her after the collision?

A. No.

Q. So that, from the time you saw the "Silver Palm" until after you came down from the lookout station on the foretop, you heard no whistle from the "Silver Palm": is that right?

A. That is right.

Q. What time did you look down from the foretop?

A. I came down about 8:15.

Q. How much of the "Albion Star" could you see when you sighted her, only her masts or her whole hull?

A. Well, I could see a little, and after while the fog lifted and I could see her very plainly.

Q. Did the fog lift after the collision?

A. The fog lifted after that.

Q. Just at the time of the collision the fog was at its densest, was it not?

A. Yes. [316]

Mr. LILLICK: That is all.

#### Redirect Examination

Miss PHILLIPS: Q. Mr. Lemire, did you at any time in the period you have been describing, refer to your watch? Did you have a watch on you?

A. Did I carry a watch?

Q. Yes, did you have a wrist watch?

A. No.

Q. Is there a clock in the foretop?

A. No.

(Testimony of Wilfred L. Lemire.)

Q. There was no clock?

A. No.

Q. In your estimates of time are you giving them just as best you can without a clock?

A. From what I heard I heard she hit at 8:06.

Q. I did not ask you what time she hit. I am asking you whether you looked at a clock at the times you have described.

A. No.

Q. You did not?

A. No.

Q. Going back to your seeing the bow lookout. Did you say that you could see the bow lookout hold out his arms, on direct examination, was it something of that sort?

A. Yes, I believe I did.

Q. You saw the bow lookout hold out his arms?

A. Yes.

Q. At the time you saw him hold out his arms where were you standing, or were you climbing up?

A. I was in the foretop.

Q. In the foretop?

A. Yes.

Q. I wish you would stand up and imitate the bow lookout, just put yourself back the way you remember seeing him, and show just what you saw him do.

A. Well I saw him face this way. That means the ship would be somewhere around in here.

(Testimony of Wilfred L. Lemire.)

Miss PHILLIPS: Let the record show the witness holds his right arm out pointing at an angle from his body toward the right.

The COURT: The record may so disclose.

Miss PHILLIPS: Q. Do you recall seeing him point at any other time?

A. No. [317]

Miss PHILLIPS: That is all.

Mr. LILLICK: That is all.

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JOHN L. KERSHAW

called for the United States, sworn:

Miss PHILLIPS: Q. What is your occupation, Mr. Kershaw?

A. Chief machinist, United States Navy, naval officer.

Q. How long have you been a chief machinist in the United States Navy?

A. Ten years.

Q. How long have you been in the Navy?

A. Twenty-eight years.

Q. Are you attached to any ship at the present time?

A. I am attached to the U. S. S. "Chicago".

Q. When did you join the "Chicago"?

A. The 16th of August.

Q. What year?

A. 1930, before she was commissioned.

(Testimony of John L. Kershaw.)

Q. Before she was commissioned?

A. Yes.

Q. Were you on watch at the time of the collision?

A. Yes.

Q. When did you go on watch?

A. About 7:40.

Q. About 7:40?

A. Yes.

Q. Where were you stationed?

A. The after engine room.

Q. What are your duties in the after engine room?

A. I was the officer in charge of the engine department on that watch.

Q. How many men were at the throttles that morning?

A. Four.

Q. Will you name them?

A. Smith, first class machinist's mate, Wommack, first class machinist's mate, Cumbie, machinist's mate second class, and we had a first class machinist's mate on No. 4 throttle, but I could not give you his name.

Q. You don't remember his name?

A. No.

Q. Is this fourth man still with the "Chicago"?

A. No, he is not.

Q. Did his term of enlistment expire?

(Testimony of John L. Kershaw.)

A. I could not say. [318] He left the ship two or three months ago.

Q. You say that you were in what engine room?

A. No. 2, the after engine room.

Q. Who were in that engine room?

A. Smith and Wommack.

Q. They were in charge of what engines?

A. Smith was in charge of No. 2 and Wommack in charge of No. 3.

Q. What is in the other engine room—what do you call it?

A. The forward engine room.

Q. That is called No. 1?

A. That would be No. 1 if you referred to them numerically.

Q. Mr. Kershaw, is there any one of the throttle men who was considered the leader, as the leading throttle man?

A. No. 2 throttle man is considered the leading throttle man, he answers the bell first and goes ahead of the others, all others follow his procedure.

Q. What are the directions to the throttle men in regard to Smith as leading throttle men?

A. Not only Smith alone, but the man on the No. 2 throttle is supposed to have a little more experience than the other, we figured on that being the best man and that engine is connected up in relation to the others so that they can see the revolutions that he is making and keep as near his revolutions as possible.

(Testimony of John L. Kershaw.)

Q. When you are in No. 2 engine room do you know, or can you tell what the engines of No. 1 and No. 4 are doing?

A. Yes.

Q. How?

A. The revolution indicator had a dial there with a hand pointing to the number of revolutions that the shaft is making.

Q. Do you know what boiler power was available on the "Chicago" at 8 o'clock on the morning of October 24?

A. 27,000 boiler horse power.

Q. What burners were in use at 8 o'clock?

A. There were eight burners actually cut in on each boiler of the two that were [319] steaming.

Q. What is the size of the sprayer plates?

A. 3,208, the largest size.

Q. What revolutions were the engines making, let us say, about five minutes of eight?

A. 173 revolutions.

Q. Now going on from that point, do you recall what orders were received—what was the next order received?

A. The next order received was, a few seconds after 8 o'clock, we got a two thirds and a stop bell right after, so the throttles were closed within a few seconds after 8 o'clock.

Q. That was a few seconds after 8 o'clock?

A. Yes.

Q. What was the next order received after the order to stop engines?

(Testimony of John L. Kershaw.)

A. Two thirds ahead, and then standard speed ahead.

Q. Do you know what the engines did under the stop order?

A. No. 2 engine stopped within less than a minute after the bell was received. The others, I could not state positively, although I know they were coming down very rapidly, and possibly all of them stopped.

Q. Why are you positive that No. 2 engine stopped?

A. We had to take care of the steam on a sudden stop bell, and the safety valve was hissing, and for that reason we opened the astern throttle to bleed off the excess steam. That caused the turbines to stop.

Q. Did No. 2 begin going astern at that time?

A. It did not.

Q. You have referred to getting orders after that of two thirds ahead and standard ahead. Are there any instructions regarding the rate at which your revolutions shall be increased on the "Chicago"?

A. Yes, we have a table before each throttle man giving the rate of acceleration, depending on the number of boilers we are under.

Q. An acceleration table?

A. An acceleration table.

Q. Did you bring one of those tables with you?

[320]

A. I have a copy of one here.

(Testimony of John L. Kershaw.)

Q. Where did you get this?

A. From the after engine room of the "Chicago".

Q. Are these tables nailed or pasted, or what, on the throttles?

A. Some of them are pasted to a cardboard and stuck in a contained with a piece of isinglass over the top of it.

Q. Where did you get the one you have in your hand?

A. In the engineer's office. I had a messenger go to the engineer and get it and bring it up to me.

Q. Do you know whether or not an exact copy of this table was pasted at the throttles?

A. There is one of them in front of each throttle man, right in front of the throttle.

Miss PHILLIPS: May I read into the record the first part of these throttle tables? I am going to offer this exhibit, but I think the first part of it may be helpful if read, or would your Honor like to look at it?

The COURT: If there is no objection you may read it in.

Miss PHILLIPS: Mr. Kershaw, I observe the first part of this says, "Table II shall be used for accelerating. This table presupposes that the boilers have been steaming and the plant is thoroughly warmed and that no emergency exists.

(Testimony of John L. Kershaw.)

“Table II(a) ( 0—18 knots, 1 fire room in operation (C. A. 24-25 2 boilers).

“0-5 knots, one minute.

“5-10 knots, one minute.

“10-15 knots, one minute.

“15-16 knots, one minute.

“16-17 knots, one minute.

“17-18 knots, one minute.”

Will you go ahead and explain, give us a little more what is meant by that standard acceleration table from zero to 18 knots?

A. If we have a standard speed of say 15 knots, and they ring up one-third, the engine throttle would be opened and the speed [321] would come up to 50 revolutions on the dial in front of the throttle man within the first minute. Following that we would remain at that speed until two-thirds speed was rung up, which would be 100 revolutions a minute at 15 knots. As the throttle man would open his throttle a little more, and at the end of the second minute he would be at 15 knots. At the end of the third minute, if standard speed was rung, he would be up to revolutions corresponding to 15 knots, and in that case it would be approximately 145 revolutions, and then each knot from there on would be so many revolutions per minute.

Q. From the time the ship was dead in the water, the first signal contemplates that in getting up to five knots you shall allow one minute?

A. Yes.

(Testimony of John L. Kershaw.)

Q. That is revolutions per minute?

A. The revolutions are what we go by.

Q. Not actual speed in the water?

A. No, we have no way of telling that.

Q. Then revolutions from five to ten knots there is another minute for revolutions to come up?

A. Yes.

Q. Ten to fifteen knots would be another minute?

A. Yes.

Q. And then thereafter for each knot, one minute; is that correct?

A. Yes.

Q. To get from zero to 18 knots, how many then is contemplated shall be allowed to the throttle men to bring their revolutions to the speed?

A. Three minutes to 15 knots, and three more minutes to 18, making a total of six minutes.

Miss PHILLIPS: I would like to offer this table as Government's Exhibit next in order.

The COURT: It will be received as Government's Exhibit No. 6 in evidence.

(The document was marked "Government's Exhibit No. 6.") [322]

Miss PHILLIPS: Q. After that stop order that morning, when you got the order two-thirds ahead, what action did that order two-thirds ahead call for from the throttle men?

A. The throttles were opened and the engines started turning over. That meant that we had at least two minutes to get up to ten knots speed. That was the meaning of the two-thirds.

(Testimony of John L. Kershaw.)

Q. Then when the order "standard" was given, that contemplated what?

A. At the end of six minutes we were up to 173 revolutions, or 18 knots.

Q. You say six minutes. You mean four additional minutes to the first two minutes?

A. Yes.

Q. Mr. Kershaw, did you feel the collision in the engine room?

A. Yes, there was quite a jar.

Q. What were the engines doing at the time of the collision?

A. All four throttles were going astern in excess of 100 revolutions.

Q. You say in excess of 100 revolutions. When did you last look at the indicator before the collision?

A. Probably ten or fifteen seconds.

Q. You did not look at them after that?

A. No, I could not be positive of anything after that, as to revolutions.

Q. You say in excess of 100 revolutions. Can you give an estimate of how much in excess of 100?

A. Very likely 25, they were increasing speed, so my attention was called somewhere else and I did not see it after passing 100.

Q. Are you positive as to the number by which they exceeded 100?

A. No, I could not be positive of that. I was not looking at the indicator at that instant.

(Testimony of John L. Kershaw.)

Q. Mr. Kershaw, how many revolutions were the engines making—how many revolutions did the engines get to under that standard ahead order?

A. They were somewhat behind this table. I did [323] not see them going in excess of—I saw them in excess of 100, but they were all four together. I know they were slightly behind the table, but how much I could not say.

Q. Is there anything that fixes that in your mind?

A. Yes.

Q. What is it?

A. At the end of the second minute, No. 2 throttle man was somewhat behind in his revolutions, he was below 70, and I called his attention to it, to speed up a little, so he carried his throttle a little over and started building up more rapidly than he was.

Q. You say he was a little behind and did build up?

A. Yes.

Q. Do you know how far the engines got under the standard order until the time they were put astern?

A. Something below 120; I don't believe they got up to 125. I think it was about 100.

Q. But you are not sure of the exact number?

A. No.

Q. Was there anything the matter of the machinery of the "Chicago" before the collision?

(Testimony of John L. Kershaw.)

A. No, before the collision everything was working in perfect condition.

Q. Was there any delay in the execution of the orders so far as you know?

A. Not the slightest.

Miss PHILLIPS: You may cross examine.

### Cross Examination

Mr. LILLICK: Q. Mr. Kershaw, as I understand your testimony you were in the after engine room?

A. Yes.

Q. The forward engine room is separated from you by a bulkhead?

A. Yes.

Q. There were two throttle men in the after engine room and two in the forward engine room?

A. Yes.

Q. The after engine room throttle men were on engines 2 and 3?

A. Yes.

Q. In the forward engine room was there another officer in a [324] similar position to yourself in which were stationed No. 1 and 4 throttle men?

A. No, there was a chief machinist's mate who had charge of the forward engine room.

Q. In the same position as yourself?

A. Yes.

Q. So that you were not in charge really, of both the forward and after engine room, you only had charge of the after engine room?

(Testimony of John L. Kershaw.)

A. I had charge of the whole engine room plant, everything pertaining to the engines at that time. The chief machinist's mate in the forward engine room handled it according to the engine room telegraph orders received over the telegraph from the bridge.

Q. Is it your testimony that you were continuously in the after engine room from 8 o'clock that morning until 8:10?

A. I was.

Q. How far were you standing from the No. 2 throttle man?

A. My guess would be eight feet.

Q. Did you remain in that position during all of that time or did you walk about the engine room?

A. Well I did not walk away more than three or four feet from that position.

Q. In what position is the revolution counter as compared to a man in a standing posture, before his throttle?

A. Forward and to the left of No. 2 throttle.

Q. How far away from him?

A. About five feet, that is the revolution counter.

Q. I am talking about the revolution counter. I had, up to now, been talking of the revolution counter.

A. Yes.

Q. How large is the revolution counter?

A. About eight inches in diameter, as a guess.

(Testimony of John L. Kershaw.)

Q. It is on a spindle, is it not?

A. It is a spindle and has a train of gears that works inside of it.

Q. Is it comparable to the speedometer on an automobile and as the shaft turns, the revolution counter operates?

A. Yes. There are numbers showing up for each revolution made. [325]

Q. So that as the shaft turns, a number comes around?

A. That is correct.

Q. How large are these numbers on the wheel?

A. They are probably three quarters of an inch.

Q. Are they set on the round base of the counter?

A. They are.

Q. And each of those is about the same distance from the throttle man?

A. Yes. On the starboard engine the revolution counter is off to his left about five feet, and for the port throttle man is off to his right about the same distance.

Q. Is there on the dial which you mentioned a short time ago, a record kept of the revolutions?

A. There are all the records taken and logged.

Q. You mentioned a dial. What did you mean by that?

A. That is an indicator, not a revolution counter.

Q. The dial indicates whether No. 2 throttle man is ahead or behind No. 3 throttle man?

A. No, it indicates the number of revolutions that the shaft is making.

(Testimony of John L. Kershaw.)

Q. Has it numbers on it?

A. It has a dial similar to the one you spoke of on an automobile with the hand pointing at a certain number of revolutions.

Q. So that if the shaft is turning ten revolutions a minute the dial has an indicator pointing to ten?

A. Correct.

Q. And there are two of those dials in the after engine room, or only one?

A. There are four of those in the after engine room.

Q. So that you can, at the same time, keep track of the action of the propellers that are operated by No. 1 and No. 4 engines?

A. Correct.

Q. Was it from those dials that you took the revolutions about which you have testified this morning?

A. It was.

Q. Did you personally make any record of those?

A. I did not.

Q. When No. 2 throttle man ran behind, can you tell me what number [326] of revolutions his engine was going while No. 3 throttle man was making another number?

A. No. 3 throttle man was following No. 2 as close as it was possible to keep them together.

Q. So that it is your testimony that the No. 2 throttle man and the No. 3 throttle man operated their engines at the same speed?

(Testimony of John L. Kershaw.)

A. Practically the same; the indicators were practically the same, as near as you could see.

Q. Although No. 2 throttle man was over two minutes slow?

A. No.

Q. Under two minutes slow—You correct me if I misunderstood you. I understood you that No. 2 throttle man was slow. How slow was he?

A. At the end of the second minute, within a number of seconds of the end of the second minute I checked his revolutions and saw that he was below 75 revolutions when he should have been up to 100.

Q. And what was No. 3 making?

A. He was following No. 2.

Q. So that No. 3 was making 75 revolutions?

A. Less than 75.

Q. How about No. throttle man, what was he doing?

A. The same.

Q. So that all four throttle men in the engine room of the "Chicago" that morning were not following the standard table of acceleration, but were following the No. 2 throttle man: Is that correct?

A. That is correct. Had they dropped behind, his attention would have been called to it by some one of the throttle men.

Q. Mr. Kershaw, I show you Silver Line Exhibit 1, Smith, the engineer's bell book, with the figure 2 upon it, the bell book record of No. 2 throttle man, and call your attention to the entry commencing 8 o'clock two-thirds speed, with the revolution counter indicating 7070 revolutions.

(Testimony of John L. Kershaw.)

Miss PHILLIPS: I do not think that is correct.

Mr. LILLICK: The indicated revolutions is 007070. That indicates, does it not, that the revolution counter of Smith, Engine No. 2 at 8 o'clock, indicated 7070 revolutions: Is that right? [327]

A. That is correct.

Q. At 8 o'clock, the signal "Stop", the revolution counter indicates 007075: Is that correct?

A. That is correct.

Q. Meaning that the engines had turned over five revolutions between the entry of those two orders?

A. That is correct.

Q. At 8:03, two-thirds, the engine room counter stood at 007171. Is that right?

A. That is correct.

Q. That time was taken, was it not, by the throttle man himself?

A. Yes, and written in there.

Q. And written in at that time?

A. Yes.

Q. For his record?

A. Yes.

Q. So that between 8 o'clock and 8:03 the engine at which Smith was the throttle man, No. 2, had revolved the distance between 7075 and 7171, is that right?

A. A difference of 106 revolutions.

Q. The next order, 8:03, standard, 007240 indicated that between those two entries, Smith, the throttle man put it down the shaft had revolved 7240 revolutions: Is that right?

(Testimony of John L. Kershaw.)

A. No, the difference between the two.

Q. The difference between the two?

A. Yes.

Q. You and I mean the same thing, Mr. Kershaw.

A. This being taken from an angle, they might vary a few seconds.

Q. You are referring by that to the times 8, 8:02 and 8:03?

A. Yes.

Q. At 8:07 when the entry "Emergency full speed astern" was entered, the revolution counter indicated that the shaft had revolved 007690 times?

A. Yes, 450 revolutions.

Q. There seems to me to be a change made over that counter reading.

A. Either a 5 or 6.

Q. Either a 5 or 6. Will you agree with me that a record of the number of revolutions on that engine was first written 7590 and then changed to 7690?

A. It looks more like 590, the first reading. [328]

Q. So that, in your opinion, that recording as it now stands, is 007590?

A. As if there was a five and changed to a six.

Q. Which is it now?

A. I would say 690.

Q. And changed from a 590?

A. It has the appearance of being a 590. If he started to make that 6, it would look the same as that.

(Testimony of John L. Kershaw.)

Q. In any event, you agree with me now that it is a six instead of a five?

A. Yes.

Q. I show you "Silver Line" Exhibit Cumber No. 1, page No. 4, and call your attention to the first line, the first entry, 0800, two thirds, that the revolution counter for No. 1 engine is 000575. The next entry of 0801, Z, stop, the engine counter was 000790.

A. That is what it reads there, but there is a mistake in that.

Q. This is the entry made at the time by the throttle man whose business it was to keep that record from a visual observation and enter it in the log. You say it is incorrect?

A. Yes, I can verify it.

Q. Let us go on. You can explain that afterwards. The next entry is 0802, two-thirds speed, and the engine counter still shows 000790. Would you say that that is correct?

A. No, there is a mistake in that.

Q. This is a record made up at the time from visual observation and entered in the regular record: Is that right?

A. That is correct, they are supposed to make that up.

Q. The next entry is 0803, standard, and the revolution counter shows 000900. That is the record shows a difference of how many revolutions between 8:02 and 8:03?

A. 110 revolutions there.

(Testimony of John L. Kershaw.)

Q. And from 8:03 to 8:06, stop, the entry shows a revolution record of 00124, or a difference in three minutes, of how many revolutions?

A. 340. [329]

Q. Now as to the last two entries I have read would you say that they are correct?

A. It is possible that this one is correct here.

Q. Pointing to 8:03, indicating 000900 revolutions?

A. Yes. I would have to go all the way back here to this stop bell to see.

Q. You want to explain why you think the written record kept at that time by Cumbie is incorrect. Will you tell me?

A. I do not think he got his times right when he put in these revolutions.

Q. Do you think that your memory with respect to what happened on that occasion should be taken by us as more authentic and correct than a written record kept by Cumbie at the time as part of his duty?

A. I know from my experience that these times of revolutions are not correct.

Q. I show you Silver Line Ltd. Exhibit 1, Womack.

A. There is no 8 o'clock signal in there, it is 8:01.

Q. I find that there is no record at 8 o'clock. That is correct?

A. That is correct.

(Testimony of John L. Kershaw.)

Q. Did Wommack, the throttle man of No. 3 engine go on duty that morning in the engine room at 8 o'clock?

A. He was on before 8 o'clock.

Q. Was he on as early as 7:28?

A. I couldn't say what time he was on.

Q. I call your attention to this entry in the log of 0728, 7:28 in the morning?

A. Yes.

Q. Standard speed, 173 revolutions, 939,400 on the counter, and ask you whether that has been signed by the man as having charge of that engine room before him that morning, before he came on watch?

A. W. R. Miller signed that log, and that was the only change that was made during that watch on No. 3 throttle.

Q. What time did you go on duty?

A. About 7:40. [330]

Q. So that at 7:40 the man Miller, whom you succeeded, signed that log and turned this over to you?

A. That is correct.

Q. And some time between 7:40 and 8 o'clock Wommack came on duty?

A. He was on before 8 o'clock, I could not say just what time he came on.

Q. Wommack, when he came on, apparently did not make record in his bell book until 8:01?

A. There is no record that he made in the bell book until he got a change of speed.

(Testimony of John L. Kershaw.)

Q. So that No. 3 engine was running at full speed, at least full stern speed of 18 knots, 173 revolutions up to 0801 that morning?

A. From No. 2 throttle, I know that that throttle was pulled up at the same time that No. 2 was, so it could not have been making standard speed at 8:01.

Q. That is your explanation of this written record of No. 3 engine throttle, that that throttle man did not accurately make the record?

A. To the best of his ability he made it correct, he was a new man and he was and he was looking at an angle, and looking at a different angle it would make several seconds difference.

Q. The first entry which Wommack made on this record was at 0801.

A. Zero speed, stop.

Q. And the revolution counter is 945,010, or some other number—what is it?

A. 945,010 is correct.

Q. What change has been made on that, can you tell me from looking at this?

A. There has been no change on that.

Q. Might I call this to the court's attention. It is your testimony that these figures have not been written over?

A. I do not believe there has been any alteration at all with the rest of the figures.

Q. Going back to the first entry what Wommack made, it was 8:01, stop, 945,010?

A. Correct.

(Testimony of John L. Kershaw.)

Q. The next entry made by Wommack was at 0803, two-thirds? [331]

A. 115 revolutions per minute.

Q. 115 revolutions per minute, 945,300 revolutions on the counter?

A. Yes.

Q. A difference of 290 revolutions between 8:01 and 8:03?

A. That is what he has there.

Q. I call your attention to the revolutions per minute column and ask you whether 115 has not been written over another number.

A. It looks like there might have been an erasure of that 115.

Q. The next entry that Wommack made——

Miss PHILLIPS: Wommack did not testify to making this entry. Another man made this entry.

Mr. LILLICK: The next entry made in this engineer's bell book at 8:05, is standard speed, I should say 193, it may have been intended for 173.

A. It is 173.

Q. The revolution counter showing 945,000 revolutions: Is that right?

A. 300 less than it had been two minutes previous.

Q. I will ask you, Mr. Kershaw, whether, on the face of this record, it be not impossible that the "Chicago" No. 3 engine would have been going at 8:03 at two-thirds speed and the revolution counter show 945,300 revolutions, and at 8:05 standard speed,

(Testimony of John L. Kershaw.)

and have entered in the record that the revolution counter was 945,000 revolutions?

A. There is something wrong there.

Q. This record has also something wrong with it. There is no possibility of being able to explain that, is there?

A. I can explain that because I happen to know that those two bells came in a little different rotation than that.

Q. Who was the man Haynes who was down in the engine room that morning and entering the times for Wommack, do you know?

A. Haynes is a second class machinist's mate.

Q. What was he doing there?

A. He probably came down there to get the press news. I have no idea what brought him to the engine room [332] at that time.

Q. Is that the custom on the "Chicago" to have other men in the engine room while the men are at their posts?

A. No.

Q. Is it customary on the "Chicago" to have a man, whose duty it is to keep a logbook, have another man keep it for him?

A. He was a new man, and in that case it was possible for him to have some one write the log for him.

Q. Wommack was a new man?

A. He had been on the throttle a short time and possibly Haynes had gone down to the engine room to help him handle the log.

(Testimony of John L. Kershaw.)

Q. You knew that Haynes was in the engine room at the time?

A. I could not swear that he was in the engine room.

Q. I think you said that you did know that another man made these entries. How did you know that?

A. The junior officer of the watch said he was in the engine room before; whether he was that instant I could not say. I did not say who wrote that.

Q. In any event that was not the usual custom in the engine room of the "Chicago", was it?

A. No, it is not the usual custom for anyone to enter in that log unless the throttle man asks him to.

Q. There is no doubt but that that particular log is incorrect?

A. Not the slightest doubt in my mind that that log is incorrect.

Q. Can you go further and say it is not possible to use it for any purpose because of its inaccuracy?

A. I would not go that far.

Q. What could you use it for?

Miss PHILLIPS: I think that counsel is now going into the weight of the evidence, and I think is very plain that is a matter for the court to pass upon and not the witness on the stand, and I object to counsel's question as calling on the witness to pass on a question of law.

(Testimony of John L. Kershaw.)

The COURT: I presume he could state whether he feels he could reconstruct that.

A. That can be reconstructed. [333]

Q. Could you do it, do you believe?

A. I could if I had the 8 o'clock engine room rough log.

Mr. LILLICK: The only way you could reconstruct it would be by comparison of those logs kept on the vessel?

A. Yes, it could be reconstructed by the other log.

Q. What other record is kept of No. 3 engine on the "Chicago"?

A. There is a rough log that shows revolutions, oil pressure, steam pressure.

Q. Who keeps the rough log of No. 3 engine?

A. The turbine bearing man writes them out down below and passes them up to the throttle men at the end of each hour, showing average pressures and temperatures on the ship.

Q. You know, do you not, that there is not any other record of the number of revolutions, in other words, on No. 3 engine for 8:03 than this?

A. For 8:03 that is the only record.

Q. Not only for 8:03, but for 8:01?

A. 0800 can be reconstructed from that.

Q. Is there any other record in existence of the number of revolutions that engine No. 3 makes on the "Chicago" than that entered upon this engineer's bell book at 8:01?

A. No, there is not.

(Testimony of John L. Kershaw.)

Q. Is there any other record in existence that shows the number of revolutions of the engineer counter that was made by No. 3 engine at 8:03?

A. No.

Q. That is true of every entry on this ship, is it not?

A. Unless they are on the hour. There is a revolution record kept at each hour.

Q. So that at the end of the hour there is a record of the number of revolutions that particular engine traveled between the hour recorded and the hour previous?

A. There is at the beginning and end of the hour.

Q. But this record from No. 3 engine is a record that you yourself [334] say is inaccurate for each of the times to which we have referred?

A. That one bell there is 300 revolutions out.

Q. Will you tell me which of the others I may rely on as being accurate, commencing at 8:01. Is 8:01 accurate?

A. I could not say unless I had the 8 o'clock reading. I could say if I had the 8 o'clock reading.

Q. There is no 8 o'clock reading there?

A. There is in the engine rough log which was taken at 8 o'clock.

Q. Of Engine 3?

A. Of engine 3.

Q. Who took it?

(Testimony of John L. Kershaw.)

A. The man standing at the throttle, and I verified it at 8 o'clock.

Q. But there is no explanation as why Womack did not enter it in his record?

A. It is not required to be entered here. Only as a bell is received is it entered in this column here.

Q. Then, going back, tell me the first entry upon this record after 7:28 that morning, 8:01 can not be relied upon, can it?

A. Here is where the hitch comes in.

Q. All you have to do, Mr. Kershaw, is answer my question, yes or no.

A. This one here can not be relied on.

Q. Are you speaking of 8:01?

A. 8:01, no—8:03 and 8:05, there is a discrepancy there that it will take some time to reconstruct.

Q. I will have to go back to 8:01 and ask you whether I can rely upon the entry made here at 8:01 of 945,010, upon the engine counter as being accurate?

A. I would say that that one is correct.

Q. You then say that the entries for 8:03 and 8:05, cannot be relied upon?

A. There is a discrepancy there.

Q. Can they be relied upon?

A. No.

Miss PHILLIPS: I believe the witness has answered that question several times.

(Testimony of John L. Kershaw.)

A. It would have to be reconstructed and the other record checked.

Mr. LILLICK: Q. You just answered it "No". I call your atten- [335] tion to the entry 8:07, "Back full" and the revolution counter showing 945,700 revolutions. Is it your understanding that when the order full speed reverse came at 8:07, with the engine counter showing revolutions of 945,700, that that is correct?

A. Yes, I would say that one would be correct.

Q. Then I may rely upon the first entry, 8:01, 945,010? And I may rely upon the next succeeding entry at 8:07, 945,700?

A. I would say those were correct.

Q. So that if I deduct 945,000 from 945,700, I can rely upon the fact—Inadvertently I have read the wrong figures. Will you follow me? Then I may rely upon the fact that I may deduct the revolutions shown at 8:01, 945,010, from the entry at 8:07, 945,700, and know that the engine turned over——

A. (Interrupting) Approximately that many times.

Q. Approximately that many times. You say that is correct and I may rely upon that?

A. Yes, as near as possible to get it from the different angles you look at the clock.

The COURT: How much longer is this examination liable to take?

(Testimony of John L. Kershaw.)

Mr. LILLICK: I shall be at least 15 minutes yet.

Miss PHILLIPS: I have further examination too, your Honor.

The COURT: Then we will take an adjournment now until tomorrow morning at 10 o'clock.

(At this time an adjournment was taken until tomorrow, March 20, 1934, at 10 o'clock a. m.)

Filed June 19, 1934. [336]

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Tuesday, March 20th, 1934

JOHN L. KERSHAW

Recalled

Cross Examination

Miss PHILLIPS: Your Honor, may I make a correction in a statement I made to the court when answering your Honor's question when Ensign Leeds was on the stand. Your Honor asked me something about commissioned officers being graduates of Annapolis, and I believe I said that commissioned officers were almost invariably now graduates of Annapolis. Immediately I thought I should have called your attention to the fact that civil engineers and doctors are not graduates of Annapolis. It is the officers of the line that are almost invariably graduates of Annapolis nowadays, although the law provides, and the regulations of the Navy, that enlisted men may rise to the status

(Testimony of John L. Kershaw.)

of commissioned officers upon proper examination and ability.

The COURT: The reason I spoke of it was for the purpose of finding out whether that was an additional qualification on the part of the witness testifying. As to several of them you neglected to ask that question and I thought the reason was because they were not graduates.

Miss PHILLIPS: I was at fault. I must have been assuming that a man who became an Admiral in the Navy would be an Annapolis graduate. May I have the last question and answer read.

The COURT: Read the last question and answer).

(The record was here read by the reporter).

Mr. LILLICK: Q. Mr. Kershaw, how long was it after the two-thirds bell was received in the engine room, a few seconds after 8 o'clock, before the stop bell was received in the engine room?

A. Almost instantly, as fast as it was possible to ring the annunciator.

Q. I hand you engineer's bell book for No. 1 engine. It shows [337] does it not, that the two-thirds bell was received at 8 o'clock and the stop bell at 8:01. That is right, is it not?

A. That is the way it is entered in the log.

Mr. LILLICK: May I have the engineer's bell book for the No. 4 engine please, Miss Phillips?

Miss PHILLIPS: Yes.

(Testimony of John L. Kershaw.)

Mr. LILLICK: Q. I hand you engineer's bell book record for No. 4 engine. That also shows that the two-thirds bell was received at 8 o'clock and the stop bell at 8:01 does it not?

A. That is the way they are entered.

The COURT: What is the second record?

Mr. LILLICK: This second record is the record of No. 4 engines. There are four engines and four propeller men.

Q. I hand you the engineer's bell book for No. 3 engine. It says that at 8 o'clock that engine was running at standard speed at that time and that it continued to run at standard speed until 8:01, when it was stopped, does it not?

A. 8:01 was the time that the stop signal was entered.

Q. Prior to that, No. engine, by this record, was running at standard speed up to 8:01?

A. According to that record.

Q. So that engine No. 3 was not put at two-thirds speed at all at 8 o'clock, was it?

A. The throttle on No. 3 engine was closed before 8:01.

Q. It was at No. 3 engine that Haynes was standing with Wommaek?

A. Wommaek was standing at No. 3 engine. I did not see Haynes at that time, although he might have been standing there.

Q. You testify now that, notwithstanding the fact that the engineer's bell book for No. 3 engine,

(Testimony of John L. Kershaw.)

though it shows that that engine was running at standard speed up to 8:01, was stopped before that time?

A. The throttle on that engine was closed before 8:01.

Q. How do you know that? [338]

A. I was in a position to see that they were closed.

Q. If you were told that Wommack testified that the first order he received after 8 o'clock was a stop bell, would you change your testimony?

A. The first bell he received after 8 o'clock?

Q. Was a stop bell—Listen, Mr. Kershaw, this is the question: If you were told that Wommack testified that the first order he received after 8 o'clock was a stop bell, would you change your testimony?

A. No.

Q. Then you deem your recollection of the events that morning, with your observation of what occurred on the throttle of four different engines, as being more accurate than the written record made by the throttle man himself at that engine?

Miss PHILLIPS: Just a moment. I may object to that question on two grounds. First the testimony of three of the throttle men has been taken to explain their method of making the record. Counsel's question to the witness I think is designed to ignore the statement of the throttle men as to the method that they recorded events. Secondly, this witness has stated that he never made any of these

(Testimony of John L. Kershaw.)

records himself. Now he is asking him to superimpose upon these records his conclusion as to the method of taking them without taking into consideration the testimony of the men themselves. I also think that the question really is argumentative.

Mr. LILLICK: May I be heard for a moment. It is my understanding in a cross examination of this character, counsel cross examining has the fullest latitude with respect to testing the memory of a witness, and in testing that memory to compare his testimony with written records, and ask the witness in the face of those written records whether he still would say that his recollection is best.

The COURT: I presume that the question to the witness amounts to this, if these records had so disclosed, would it be consistent [339] with his testimony. The question you are asking is, how certain he is of his testimony. I think he can answer the question provided he is given the assumption, if that were true, he is able to say that, if these records do so disclose, as Mr. Lillick has stated.

Q. Are you positive from your own recollection that your testimony is correct?

A. My testimony is correct.

Q. You have no uncertainty about it?

A. Not a bit.

Mr. LILLICK: Q. I hand you the engineer's bell book record for No. 1 engine. It shows that two-thirds speed was received at that engine at 8:02, does it not?

(Testimony of John L. Kershaw.)

A. Two-thirds ahead was received at 8:02 according to that. That would be due to the angle at which the throttle man was looking at the clock.

Q. In order that you may not think that I am attempting to confuse you, I am asking you about the two-thirds signal now. You remember that the testimony is that there was a two-thirds signal two-seconds after 8 o'clock, then a stop signal, as you testified, immediately following as quickly, I understood you, as it could be given. I am now referring to the next two-thirds signal. The engine bell book of No. 1 engine shows that that two-thirds signal was received at 8:02 at that engine.

A. That was received at 8:03 and just following it, so that there was not time enough to make it at the time noted in the log with the standard speed.

Q. Answer my question, please. I show you engine bell record for No. 1 engine and ask you whether, in looking at it as you are with me, that that record does not show that a two-thirds was received at that throttle at 8:02? Does it or does it not?

A. This shows that it was received at 8:02.

Q. I hand you engineer's bell book record for No. 4 engine which shows that that two-thirds signal was received at 8:02, does it not?

A. That is correct.

Q. I show you the engineer's bell book for No. 1 engine, and it [340] shows that standard speed was received at 8:03 does it not?

A. That is correct.

(Testimony of John L. Kershaw.)

Q. I hand you the engineer's bell book for No. 2 engine; it shows that standard speed was received on No. 2 engine at 8:03, does it not?

A. Two-thirds at 8:03 and standard at 8:03—two-thirds ahead speed was received on No. 2 engine at 8:03, followed at 8:03 by standard speed, so close together that they were within 5 seconds of each other, and were entered at 8:03, both signals.

Q. But the standard speed is entered in that bell record at 8:03?

A. Correct.

Q. I hand you the engineer's bell book record for No. 3 engine; it shows that two-thirds speed was received at 8:03, does it not?

A. Two-thirds ahead. This is incorrect. It should be a three there——

Q. I show you the engineer's bell book for engine No. 3 and ask you if that record does not show that at 8:03 there was entered a two-thirds ahead order?

A. That is correct.

Q. Still looking at engineer's bellbook for No. 3 engine it shows that at 8:05 a standard speed signal was entered. Am I right?

A. That was entered but it is incorrect.

Q. According to that record No. 3 engine was not ordered to standard speed or placed at standard speed until 8:05: That is right, is it not?

A. That is the way it was entered in the record, yes.

(Testimony of John L. Kershaw.)

Q. I hand you the engineer's bell record for No. 4 engine; it shows that standard speed was not ordered at 8:03, does it?

A. Correct. That is the exact time that No. 3 was entered.

Q. Is it your testimony that notwithstanding these records you have just seen, entered by the various throttle men at the time that they received their orders from the bridge, that your recollection of what the indicator showed on each of those different engines, is more accurate than the record?

Miss PHILLIPS: I make objection. Counsel's question there [341] assumed the very point that I made some time ago as to the method of a particular throttle man as to the way he enters his records. Counsel is assuming that the witness knows that method.

The COURT: I think he has——

Miss PHILLIPS: Just a moment, your Honor. Your Honor will bear in mind that the testimony of these three throttle men has been taken. Counsel's question assumes an answer as to the method of making the records contrary to what the witness has testified. I object to the question as being unfair and assuming something contrary to the testimony that has been taken, and the record will bear it out.

The COURT: Of course this can be said, it assumes that the men at the throttle properly observed and correctly recorded what they observed. On that ground I think the objection is good. I do

(Testimony of John L. Kershaw.)

not think you can put the question to him as you have, by assuming that the records actually disclose those facts, that they took them down properly. I will sustain an objection to that question.

Mr. LILLICK: I think your Honor, that regardless of any answer that might be made to the question by this witness, perhaps from the standpoint of argument, it being assumed that these records are what they are, that neither the witness himself or anybody could say that the witness' recollection was more accurate than the record. I will leave the ruling as it is made.

Q. Mr. Kershaw, you testified yesterday that very few of the engines got to 100 revolutions. No. 2 throttle man was your pace maker, was he not?

A. That is correct.

Q. Did you, in the engine room of the "Chicago" appoint your ablest throttle man as your pace maker?

A. He has to be a well trained man to handle No. 2 throttle.

Q. Am I not right in stating that you put the best of your men on [342] that throttle because No. 2 is the pace maker?

A. That is correct.

Q. Bearing in mind that you testified that very few of the engines got to 100 revolutions before the collision——

Miss PHILLIPS: That is assuming, I think, something contrary to what the witness testified.

(Testimony of John L. Kershaw.)

Mr. LILLICK: What do you say his testimony was?

Miss PHILLIPS: He said the last time he looked at it that they had already passed 100, but he could not say how far they had gotten, as he had not looked at it for a few seconds, prior to the collision. Let us look at the record.

Mr. LILLICK: Perhaps we can get it from you quicker.

A. Repeat that question again.

Q. I am going to reframe it.

Q. Mr. Kershaw you testified yesterday about the engines getting, to very few of the engines getting to 100 revolutions—

Miss PHILLIPS: That is absolutely contrary to the record. My recollection is that you have misquoted the testimony of the witness. Let us find it. It is in the middle of page 249, near the middle of the page.

Mr. LILLICK: Q. Yesterday, Mr. Kershaw, you testified as follows, and I am reading from page 249:

“Q. Mr. Kershaw, did you feel the collision in the engine room?

“A. Yes, there was quite a jar.

“Q. What were the engines doing at the time of the collision?

“A. All four throttles were going astern in excess of 100 revolutions.

(Testimony of John L. Kershaw.)

“Q. You say in excess of 100 revolutions. When did you last look at the indicator before the collision?”

“A. Probably ten or fifteen seconds.

“Q. You did not look at them after that?”

“A. No, I could not be [343] positive to anything after that, as to revolutions.

“Q. You say in excess of 100 revolutions. Can you give an estimate of how much in excess of 100?”

“A. Very likely 25, they were increasing speed, so my attention was called somewhere else and I did not see it after passing 100.

“Q. Are you positive as to the number by which they exceeded 100?”

“A. No. I could not be positive of that. I was not looking at the indicator at that instant.

“Q. Mr. Kershaw, how many revolutions were the engines making—how many revolutions did the engines get to under that standard ahead order?”

“A. They were somewhat behind this table. I did not see them going in excess of—I saw them in excess of 100, but they were all four together. I know they were slightly behind the table, but how much I could not say.” Bearing in mind that testimony given by you yesterday, Mr. Kershaw, I hand you No. 2 engine bell book and ask you to look at the entries from 8 o'clock to 8:07, and that the entry of the revolutions of the engine at 8 o'clock was 7070 and at 8:07, when the emergency full astern was given, they are 7690, or a difference of

(Testimony of John L. Kershaw.)

620 revolutions, with that in mind would you still say that your testimony yesterday, that "I saw them in excess of 100, but they were all four together" is the testimony that you would still give this morning?

A. On the astern they were in excess of 100 revolutions?

Q. Yes.

A. Yes.

Q. I asked you going ahead; we are talking about their going ahead. Did you not understand my question?

A. No, would you please repeat it.

The COURT: Read the question.

Mr. LILLICK: I will reframe it.

The COURT: You do not want to have it reread?

Mr. LILLICK: It is so very long I think I will leave it as [344] it is.

Q. Mr. Kershaw, what propeller is operated by the No. 1 engine?

A. What propeller?

Q. Yes.

A. No. 1 propeller.

Q. And where does that propeller lead astern?

A. Aft of the after engine room bulkhead.

Q. Put it this way, how do you describe your propellers, outboard?

A. No. 1 is starboard outboard, No. 2 is starboard inboard, No. 3 is port inboard and No. 4 is port outboard.

(Testimony of John L. Kershaw.)

Q. Do you know how many revolutions the engines make when the "Chicago" is going at a speed of 12 knots an hour?

A. 115 revolutions.

Q. Do you know how many revolutions the engines of the "Chicago" make going at a speed of 18 knots an hour?

A. Yes.

Q. How many?

A. 173.

Q. How many revolutions will they make with a speed of 10 knots?

A. In the neighborhood of 100.

Q. How many with a speed of 14 knots?

A. About 135, without taking the time to look up the table.

Q. How many with a speed of 8 knots?

A. Between 72 and 80.

Q. How many at a speed of 16 knots?

A. Probably 155.

Q. How many at a speed of six knots?

A. In the neighborhood of 60 revolutions a minute. These are not exact, but to the best of my memory, from the revolution table.

Q. And finally, how many at four knots?

A. I could not say as to that, probably between 35 and 40.

Q. What did you mean when you testified yesterday that Smith, No. 2 throttle man, answered an instant before the other throttle men? Does each

(Testimony of John L. Kershaw.)

throttle man answer the signal from the bridge separately or does Smith alone answer?

A. In this case Cumbie, at No. 4 throttle—Smith was handling No. 2 and he was just a little bit quicker on handling the throttle than Cumbie. These signals are [345] received at the same time, but No. 2 engine will invariably be operated ahead of No. 1, just an instant.

Q. You say Smith was operating No. 1 engine?

A. No. 2 engine.

Q. I thought so. I am trying to clear up in my own mind, Mr. Kershaw, and for the record, whether when a signal comes down from the bridge of stop, who or how many answer that signal in the engine room.

A. If it is to stop the starboard engines, it would be one and two that would stop together, the throttle would be closed right instantly.

Q. How is that done physically?

A. The telegraph from the bridge rings "Stop".

Q. You do not mean that each of the four throttle men ring back to the bridge "Stop" do you?

A. That is correct.

Q. So that every time a signal is given from the bridge on the bridge telegraph to the engine room, the bridge telegraph has four separate return rings from the four separate throttle men: Is that right?

A. No, there are only two returns to the bridge. There is a starboard and port annunciator in the

(Testimony of John L. Kershaw.)

pilot house. If they want to operate the starboard engines they ring the starboard annunciator to stop, and No. 1 and 4 throttle men both answer that, and after answering the annunciator the throttles are closed.

Q. But I am only talking about the bell from the bridge, your annunciator, I think you call it. There are two bell standards on the bridge, are there?

A. There are.

Q. Does one operate the starboard propellers and the other operate the port propellers?

A. That is correct.

Q. So that for every stop signal sent down to the engine room those on the bridge had to use both of the telegraphs on the bridge?

A. That is correct.

Q. There are two separate physical acts on the bridge, then?

A. That is correct. [346]

Q. Do you know whether the same man does that?

A. I could not say, I do not believe I have ever been on the bridge when the signals were given, but they are so close together there would be no necessity of two men operating them.

Q. But there are two signals sent to the engine room, in any event?

A. There are.

(Testimony of John L. Kershaw.)

Q. And in reply to those there are, you say, two separate replies sent back to the bridge: Is that right?

A. There are. There are four men that send those signals back to the bridge.

Q. Do they take it by taking the lever on the indicator and turning it over to stop, if that be the signal?

A. That is correct.

Q. Is there such a bell indicator at each throttle man's post?

A. That is where it is operated from, he receives it at the throttle and answers it.

Q. That is what you meant by saying that Smith answered an instant before the others?

A. He being a quicker man than the others.

Q. Then following his signal, the other three men in rotation ring back "Stop, stop, stop", each one pulling the lever over?

A. That is correct.

Q. If I remember your testimony yesterday you said that you have—this is from my notes—to pick up steam to cause the engines to stop. How do you perform that operation in the engine room. You are going ahead, we will say, at standard speed. What does a throttle man in the engine room do? You just tell me what he does.

A. If we are going ahead standard speed, he watches his throttle and revolution counter to see

(Testimony of John L. Kershaw.)

that he is going the exact number of revolutions; if we get any change in speed he operates to control those revolutions.

Q. That is what I want you to tell me, what does he do, what does he turn? Is it a lever?

A. It is a large wheel.

Q. Is there anything about valves? Is there anything else that he [347] does?

A. To increase the speed he opens the throttle. It is a large wheel about 24 or 30 inches in diameter on the valve head; he turns that to the right or left whatever the case may be, for increasing or decreasing speed.

Q. What else does he do?

A. After he gets a change of speed and he gets his throttle set to the change of speed, then he enters the time that he received that change in the bell book.

Q. So that if you are running ahead standard speed and get an order, we will say, to reverse, what does the throttle man do, not about his bell book, but about the physical act of putting the engine into astern?

A. The first thing, he grabs the annunciator and pulls it around to the astern indicator and then he closes the ahead throttle and opens the astern throttle, and then during that time he would glance at his clock to get the time, and after the engine gets going astern he would get the counter and enter that.

(Testimony of John L. Kershaw.)

Q. He doesn't do anything about opening up valves or doing anything with the vacuum or condenser or anything else?

A. Not until after the speed has been changed.

Q. Then what does he do, after it has been changed?

A. Then he starts his circulator pump for going astern. He faces about and reaches the throttle to the circulating pump and opens that to get the required steam and starts the circulating pump turning over. Then he makes a right face from that valve and opens the auxiliary exhaust valve to the main condenser. From there he faces his throttle again to open or close the astern throttle, or whatever is required.

Q. Can the propeller start turning in reverse before the throttle man has gone through what you have just told me relative to the condenser?

A. Yes.

Q. And does it?

A. It does.

Q. Can you tell me whether, in using the standard table of [348] acceleration you use the same standard of deceleration?

A. Depending on the signal received.

Q. In using that standard acceleration table, do you use it for raising your speed in the same way that you use it for lowering your speed?

Miss PHILLIPS: Just a moment, I think the question of counsel is confusing.

(Testimony of John L. Kershaw.)

A. I think I understand it.

Mr. LILLICK: If you do not understand any of these questions ask me and I will explain them to you.

Miss PHILLIPS: I think counsel is confusing terms, and that is why the question is confusing. I think if the question is read he will see it.

Mr. LILLICK: The witness apparently understands what I mean.

The COURT: If the witness can understand the question, he may answer.

A. If we should get a stop bell that deceleration table is not considered at all; that is only used when steaming in formation and changing the speed, reducing the speed, say, from 18 knots to 15 knots. the whole fleet has to decelerate speed at the same rate or they would be bumping each other; so that table is followed in that case but never followed when a stop bell is given.

Mr. LILLICK: When proceeding at standard speed you get an order as you did that morning to two-thirds speed, you do use the deceleration table do you not,—from full speed ahead, 18 knots, to two-thirds?

A. That would be used.

Q. So that except for an emergency signal, or, as you have just put it, a stop signal, you use the same means of bringing your engines down in gradual proportion as you use them bringing them up in gradual proportion, and this table?

(Testimony of John L. Kershaw.)

A. In bringing the engines to a stop, the throttles are closed. [349]

Q. But on any other signal but a stop signal, would you use, in decelerating the speed the same table that you use in accelerating the speed?

A. That is correct.

Q. Now tell me, Mr. Kershaw, if your engines were at a speed of ten knots ahead—I would like for you to look at this table—and received an order of standard, with standard at 18 knots an hour, and bearing in mind that you were running at a speed of 10 knots an hour, it is my understanding that you would take a minute to bring your engines up to a speed of 15 knots an hour: Is that correct?

A. That is correct.

Q. So that if your engines were running at a 10-knot speed and you were ordered to go to standard speed, your table of acceleration picks up at a 10-knot speed and not at 0 speed?

A. Might I make that clear? If we are steaming at 10 knots and we get an order to increase speed to 15 knots, to get that additional five knots, there would be one minute allowed to get from that 10 knots up to 15 knots.

Q. That is putting it a little different from the way I have given it to you. I am assuming that your standard speed is 18 knots. You are running at 18 knots standard speed. Your engines are operated at a 10-knot speed ahead and from the bridge comes

(Testimony of John L. Kershaw.)

the order "Standard", and using the acceleration table which you have in your hand and which was being used on the "Chicago" on the morning of October 24, it would then take you one minute to go to 15 knots an hour, and then from 15 to 18, it would take you, as I understand it, one minute more to go to 16, one minute more to go to 17 and one minute more to go to 18: is that right?

A. It would take the full five minutes from 10 knots.

Q. In other words you jump from 10 to 15 in one minute and 15 to 16 one minute, 16 to 17 one minute, and 17 to 18 one minute?

A. Four minutes to get up from 10 knots to 18.  
[350]

Q. Proceeding as you were that morning of October 24, with four engines and two boilers, how many revolutions per minute did your engines make at full speed astern?

Miss PHILLIPS: Just a moment, I have not questioned this witness on that. It is not proper cross examination. I think the counsel is now going into matters of theory that I had intended to cover with the chief engineer Colton who has been on the ship since she was built and is an expert on all of those things, both as to theory and fact. In fact Chief Engineer Colton actually made these acceleration tables for this ship and worked them out.

Mr. LILLICK: May it please the court. The efficiency of the engine room crew upon the "Chicago"

(Testimony of John L. Kershaw.)

has been testified to by one of the other witnesses, and certainly with this witness, who was the officer in charge, as I understand, of the engine room, I have a right to at least know whether the man in charge of that engine room on this morning knows how many revolutions per minute full astern is, particularly when the records introduced here show that the throttle men are operating the vessel at emergency full astern, and I think on cross examination I certainly have a right to find out——

Miss PHILLIPS: Go ahead. I was just trying to save a little time. All of this is going to be covered with another witness much better qualified to testify, but if counsel wants to go ahead it is all right with me.

A. I have never seen the engines tested out to see the exact number of revolutions that can be attained with two boilers. 110 revolutions is ordinarily used at full speed astern. In an emergency it is not all we can possibly get.

Mr. LILLICK. May I have Kershaw's rough engine room log?

Miss PHILLIPS: Yes. [351]

Mr. LILLICK: Miss Phillips, the log that I have is a photostatic copy of the log which purports to be a different one from that.

Miss PHILLIPS: I am rather embarrassed. I have a rough engine room log for the 24th of Oc-

(Testimony of John L. Kershaw.)

tober which is typewritten, and on it appears a memorandum that the original was turned over to the board of inquiry. I thought I had gotten all of these from the board of inquiry, but apparently I have not. Counsel has a photostatic copy and has a full copy of the record before the court of inquiry, and I would suggest that counsel show to the witness the photostatic copy of these original sheets. They are signed by the witness, I believe. He can go ahead and use these. I have to wire the Judge Advocate for these original sheets. I thought they had been put back into this rough log, but it seems that the original sheets are not there.

Mr. LILLICK: I will be glad to use the photostatic copy that I have, and, after adjournment I will discuss it with Miss Phillips for a few minutes, and if it is convenient for her to obtain the originals, that can be done, but I will carry on with these.

Miss PHILLIPS: I think you had better go on.

Mr. LILLICK: Q. Mr. Kershaw, I hand you a photostatic copy of what is indicated as being page 764 of a log. Can you tell me what the original of this was?

A. This appears to be my log on the 8 to 12 watch on the morning of October 24.

Q. Was the original of this sheet the so-called rough log which you used that morning on the "Chicago" to take down the time and the other items indicated upon the sheet?

(Testimony of John L. Kershaw.)

A. It looks to me like the log. I would have to read it over carefully to say.

Miss PHILLIPS: Speak up, Mr. Kershaw.  
[352]

A. It looks like the same log.

Mr. LILLICK: Q. Will you read it with me: "0800, 1230 steaming as before standard speed 18 knots, 173 r.p.m. Cruising turbine combination, started No. 2 ice machine at 0800. Stopped all engines at 0800. Two-thirds A, (indicating ahead) at 8:03." May I say something off the record?

Miss PHILLIPS: No, I would rather not have it off the record.

Mr. LILLICK: After "Two-thirds A" I have read in the words "indicating ahead". I want to distinguish in the record that that was my interpolation, parenthetically or otherwise.

Miss PHILLIPS: That is all right.

Mr. LILLICK: "Standard speed at 0803. At 0807 back full was received. Collision on port bow was passed over loud speaker and general alarm sounded. Ship was rammed on port bow just forward of No. 1 turret. At 0808 operated engines as per signals in engineer's bell log. All engineering compartments were reported dry after ship was rammed." The balance of it I will not read. I offer this in evidence as our next exhibit and I will discuss with Miss Phillips the possibility of our using this instead of the other.

(Testimony of John L. Kershaw.)

The COURT: It will be received as Respondent's Exhibit 6 in evidence.

(The document was marked "Respondent's Exhibit No. 6".)

Mr. LILLICK: Q. Is the steam wheel used by the throttle man when the engines are ordered astern as when the engines are ordered ahead?

A. It is not.

Q. I understood you to say yesterday you did not know whether Haynes' term of enlistment had expired: Is that right?

A. I could not say. That question with regard to Haynes was not asked.

Q. You don't know whether his enlistment had expired?

A. No.

Q. He is not with the "Chicago" now?

A. I could not say. [353]

Mr. LILLICK: That is all.

#### Redirect Examination

Miss PHILLIPS: I have a few questions, Mr. Kershaw. Did you make any of these entries in these bell sheets yourself?

A. No, I did not.

Q. Speak up so that we can hear you.

A. I made no entries on the bell sheets.

Q. I observe that your signature appears on the bell sheet for No. 2.

A. And No. 3.

(Testimony of John L. Kershaw.)

Q. And that a man named Birchmire's signature appears on No. 1 and No. 4. Why is that?

A. No. 1 and No. 4 bell sheets are kept in the forward engine room, and Birchmire had charge of that forward engine room, and signs the bell sheets at the end of the watch.

Q. Do you know the particular method that the throttle men on duty that morning used in making their entries and records?

A. I do not believe you will find that two use the same method, or any one or two of them use the same method twice.

Q. When did you go off duty that day?

A. Some time after 12 o'clock.

Q. Where were the bell records in your engine room when you went off duty?

A. There was one in reach of each throttle man, in a holder that contains the sheets.

Q. That does not answer the question. When you went off duty where were the bell sheets? Did you take them with you?

A. No, they were in the custody of the throttle men.

Q. When did you next see them?

A. I might have seen them in the court of inquiry. I am not sure.

Q. The records of the court of inquiry will show that, will they not?

A. Yes.

(Testimony of John L. Kershaw.)

Q. Does the length of time that the ship is out of dry dock affect the number of revolutions per minute for the different speeds of [354] the vessel?

A. It does.

Q. Would it be true then that the revolutions at different speeds would vary from month to month?

A. They do vary from month to month.

Q. In giving revolutions this morning at 173, and giving them at various speeds did you have in mind any particular number of months out of dry dock?

A. No. In giving 173 as of the time of the collision, I remember that at that time that 173 revolutions was used for 18 knots.

Q. For that length of time out of drydock?

A. Yes.

Q. Have you in mind the revolutions for other speeds for any particular length of time?

A. No. That was the approximate speed. I could not say that any one of them was correct unless it would be checked.

Q. Would Chief Engineer Colton have the table showing the revolutions per month out of the dry dock?

A. He has the table.

Q. I think you referred to No. 1 and No. 4 engines being on the starboard annunciator. Did I understand you correctly?

A. No. 1 and No. 2 are on the starboard.

(Testimony of John L. Kershaw.)

Q. Perhaps I misunderstood you, or you misstated it, the record will show. Mr. Kershaw, yesterday you made some reference to the fact that there is an engineering record kept of the counters on the hour, didn't you?

A. I did, but not an official record. The smooth log will give the only official record kept of the revolution counter.

Q. On the hour?

A. On the hour.

Q. Is the smooth log here?

A. It will not show on the photostatic copy.

Q. You mean the official rough log, or what?

A. You may have a photostatic copy there which shows the opposite side of the log sheet. That shows for the average counter, that is the only [355] official record that is kept.

Miss PHILLIPS: I will see if I can find anything more on that. That is all.

The COURT: There are discrepancies in these records, are there not?

A. Yes.

Q. Haven't you a regular system on the warships of keeping records?

A. Yes, but in time of emergency your whole mind is on carrying out the orders, in stopping the ship or reversing. Your secondary consideration is the revolution counter and the bell book.

Q. Have you known of other instances of discrepancies in the records?

(Testimony of John L. Kershaw.)

A. Yes, I have found them a number of times that they were out, due to a difference in the clocks.

Q. In this instance was there a difference in the clocks?

A. Yes, I know there was difference in the clocks. No. 2 clock was the time I relied upon for all of my times, in verifying the signal being carried out.

Miss PHILLIPS: I have one or two questions I remember now. Counsel asked something about your No. 2 throttle man being the quickest man.

A. He probably was, yes.

Q. He then asked you whether the others 1, 3 and 4 would answer in rotation. What did you think he meant by rotation?

A. They all answer the throttle as exactly as they can.

Q. Do you mean to say that one would answer first and then second and then the third and then fourth?

A. No. Possibly No. 4 would answer at the same instant that No. 2 did, or as near that time as possible.

Q. Counsel has shown you a photostatic copy of the rough log which you made and signed up yourself. When did you prepare that rough log?

A. A part of that log was written before the collision and part after.

Q. Do you remember now what part of it was written before the [356] collision, and what part of it was not?

(Testimony of John L. Kershaw.)

A. If I read it over I could very likely tell you what part was.

Q. Can you pick it out? If you do not remember, say so. If you are not sure, say so. If you are positive any particular part was written after the collision, say so.

A. Starting from "Started No. 2 ice machine at 0800, everything else after that is after the collision.

Q. That is only the ice machine was written before the collision?

A. That was before the collision because they had word they were starting this ice machine a few minutes before 8, and I logged it at 8 o'clock.

Q. You have referred to various times in there, Mr. Kershaw. Were you yourself recording times during this period of time?

A. No.

Q. You were not?

A. No, but I was glancing at the clock to see that the throttle man on No. 2 got the correct time entered.

Q. In entering your times there, your various times, for instance, I think you said something about the ship being rammed at 0808, where did you get the time for that?

A. Glancing at the clock after the time of the collision, I glanced at No. 2 clock, from where I was standing.

Q. Did you get the minute of the collision at 8:08?

(Testimony of John L. Kershaw.)

A. At 8:08 the second hand was pointing straight up on the clock.

Miss PHILLIPS: That is all.

#### Recross Examination

Mr. LILLICK: Q. Mr. Kershaw, who turned the ice machine on? What did you have to do to turn the ice machine on?

A. There is a machinist's mate stationed in the ice machine room.

Q. A separate department?

A. A separate department, he calls up by telephone a few minutes before he starts and tells us that he is starting.

Q. Can you tell me how much the revolutions vary after a vessel [357] has been out of dry dock when you are starting your engines?

A. How much it varies for different revolutions?

Q. Let us say for a month?

A. No, but there are tables on the ship which will give that exactly.

Q. On this occasion 173 revolutions meant 18 knots speed. did it not?

A. Yes.

Q. 115 revolutions, how much speed?

A. Twelve knots.

Q. You did not intend us to understand that there were only two engine room telegraphs from the bridge to the engine room as a means of communication, do you? There is a separate means of

(Testimony of John L. Kershaw.)

communication for each throttle man to the bridge, is there not?

A. There are two separate independent annunciators; one is operated by a lever or chain and another is operated electrically.

Q. The one that is operated electrically, does that lead to each throttle man?

A. Yes.

Q. So that from the bridge they can reach each separate throttle man if they desire?

A. Yes—Just a moment; No. 1 and 3 are reached together from the bridge, and No. 2 and 4.

Q. No. 1 and 2 are reached together and No. 3 and 4?

A. Pulling one lever rings up the annunciator for two engines.

Q. There is no means, then, for example, of communicating with No. 1 alone from the bridge?

A. Not independently.

Q. So that there are two means of communication, one an electrical annunciator which would get two throttle men on it in the same engine room, and another means by mechanical device which rings a bell?

A. Yes.

Q. You spoke about a discrepancy in the clocks. Will you tell me what you meant by that? Was there a difference in the clocks in the fore engine room and the one in the after engine room?

A. I could not say exactly how much the discrepancy was, but I know in the case of the clock

(Testimony of John L. Kershaw.)

on the No. 2 engine and the clock [358] on the No. 3 engine, the clocks were probably 20 seconds difference.

Q. There were two clocks in the engine room in which you were?

A. Yes.

Q. And two clocks in the other engine room?

A. Yes.

Q. In other words each throttle man has a clock?

A. An independent clock.

#### Further Redirect Examination

Miss PHILLIPS: Q. You spoke about means of communication between the bridge, that is, electrically and the other way?

A. Mechanical.

Q. Is there a voice tube as well?

A. There is a voice tube—there was a voice tube at that time in the telephone booth but not in communication with the throttle men.

Q. Was that in use that morning?

A. Not to my knowledge, the voice tube was not used.

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#### WARREN S. MacKAY

called for the United States, sworn:

Miss PHILLIPS: Q. Will you give us your full name?

A. Warren S. MacKay.

Q. What is your occupation?

A. I am Chief radio electrician on the U.S.S. "Chicago".

(Testimony of Warren S. MacKay.)

Q. How long have you been in the Navy?

A. Twenty-four years and some odd months.

Q. How long have you been attached to the "Chicago"?

A. Nine days after it went into commission, or ten days.

Q. Nine or ten days after she went in commission?

A. About that approximately.

Q. Mr. MacKay, where were you when eight bells struck that morning on the "Chicago"?

A. Outside of the pay office, the United States pay office. [359]

Q. How did you happen to be outside of the pay office?

A. I had walked up from the mess room.

Q. What made you come up from the mess room?

A. Well, the way the fog whistles were blowing.

Q. Did you hear any two-blast signals?

A. Yes.

Q. Where were you when you heard that?

A. I heard a two-blast signal when I was in the mess room.

Q. I want you to place on this your route from the mess room up to the pay office. Tell us where you came from.

A. My room is the only one that was not smashed, so we can put that right down there.

(Testimony of Warren S. MacKay.)

Q. That is forward on the ship, the reverse side of the point of the impact?

A. I had the most forward room.

Q. You said you were in the mess room at breakfast time?

A. Yes.

Q. Shortly before 8 o'clock and heard a two-blast signal. Where is the mess room?

A. Right here, all the way across.

Q. That was the mess room?

A. Yes.

Q. Where did you go from the mess room to the pay office?

A. I walked up here and then you go across and back of the turret and go up a ladder and the pay office is just about in there.

Miss PHILLIPS: The witness is now pointing to a point on the "Chicago's" starboard side at a point approximately beneath the foremast. Is that correct?

A. Yes.

Q. How many decks below the main deck?

A. It is on the same deck, the pay office is right here.

Q. What did you do?

A. I was standing there talking to the chief store keeper, Gardner, and I heard the collision drill go, at least I thought it was collision drill.

Q. What did you do then?

(Testimony of Warren S. MacKay.)

A. I started back to go out of this door, and was going out through the door to get in here——

Q. (Interrupting) This is the point going through the door?

A. Yes. [360]

Q. Is that the well deck?

A. It is the well deck.

Q. Did you at any time look over the side at the water, over the side of the ship at the water?

A. Yes.

Q. Whereabouts were you?

A. Well, I came back from here, there were too many men around there, and I walked up from here and stood right in here.

Q. The witness is pointing at a point in the well deck immediately after the break—do you call that the break in the deck?

A. Yes.

Q. Did you see anything at that time?

A. Yes, I gazed around here and I saw another ship over on the starboard hand.

Q. You saw a ship on the starboard hand?

A. Yes.

Q. Did you know that there was another ship in the offing at that time?

A. This one here that I saw.

Q. Any other ship—Did you know anything about the ship being off on the port side?

A. No.

(Testimony of Warren S. MacKay.)

Q. Did you look at that ship on the starboard?

A. Yes.

Q. Go ahead with your story now of what you did.

A. I looked at that ship over there, and I figured that was the one that all the fog signals were going for, and she seemed to be in the clear, so I just rubbered around and looked in the water, and then walked on back to here, and I was standing about here looking at the executive officer when the crash came.

Q. You were still on the well deck at the time of the crash?

A. Yes.

Q. You say you looked over the side of the ship into the water?

A. Yes.

Q. Did you form any opinion as to the speed of the "Chicago" at that time?

A. There was not any speed.

Q. There was not any speed?

A. No.

Q. What do you mean by "there was not any speed"? [361]

A. The ship was not going, was not moving in the water.

Miss PHILLIPS: You may cross examine.

Cross Examination.

Mr. LILLICK: Q. When did you first talk about

(Testimony of Warren S. MacKay.)

the collision with respect to the speed the "Chicago" was making at the time of the collision?

A. When did I first talk about it?

Q. Yes.

A. Sunday afternoon I passed the remark, the first that I know of.

Q. The collision was on Thursday?

A. I mean I talked of her last Sunday.

Q. The first time that you have spoken of what you observed about the speed was you mean last Sunday?

A. I would not want to say that under oath. I might have said something, but I never got into any argument about it.

Q. With whom were you talking last Sunday when you made that remark?

A. Lieut. Commander Dees.

Q. Did Lieut. Commander Dees ask you whether you noticed that, or did you volunteer it?

A. I assumed that everybody knew it, so I asked him why there was any doubt about the case being settled before we sailed.

Mr. LILLICK: That is all.

#### Redirect Examination.

Miss PHILLIPS. Q. Mr. McKay, one of my associates has just called attention to the fact that it was not clear to him as to just the point of time at which you went over and looked over the side at the water. That is, that happened after what and

before what, or can you relate it to something else in point of time?

A. Well, the only reason I went out there at all was because the collision signal went, and I guess it was about 20, maybe 30 feet, to the break of the well deck, and I guess it is about 50 feet roughly, back to there, the time it takes an average man to walk [362] that distance and back over here. There were men running all around me, I could not make any speed.

Q. With reference to the time of the collision, how long was that before?

A. Well I walked back to there and looked over to see the ship again, looked up and saw the executive officer and saw he was looking aft, and I was going to tell him that the ship was over there so he could see it. I imagine from the time I looked over the side until I walked back there and the collision came, it was a minute or a minute and a half.

Q. You did not time yourself on that?

A. No.

Q. And all of this time you were looking at that ship off on the starboard side?

A. I looked at her out there and I saw her clear.

Q. So it was a surprise party when you found a ship on the port side?

A. I never knew that. When I came back and looked at this ship, that was the first time I ever saw it.

#### Recross Examination

Mr. LILLICK. Q. How long did you stay there

(Testimony of Warren S. MacKay.)

looking at the "Albion Star" as that was the vessel on the starboard side?

A. That is the first time I have heard her name; I should say 15 seconds or 20 seconds.

Q. You just walked on back and were going into your room—you were on your way back to your room?

A. No, my room was not back there.

Q. I do not mean your room, I mean your radio quarters?

A. Yes, that is where I was going.

Q. It was on your way back to your radio quarters that you looked at the other ship?

A. Yes.

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### FRANK P. DAVENPORT

called for the United States, sworn:

Miss PHILLIPS: Q. Will you give us your full name?

A. Frank Davenport. [363]

Q. What is your occupation?

A. Machinist's mate, first class, United States Navy.

Q. How long have you been in the Navy?

A. Twelve and a half years.

Q. How long have you been a machinist's mate first class?

A. About five years.

Q. Are you attached to any vessel?

(Testimony of Frank P. Davenport.)

A. The U. S. S. "Chicago".

Q. How long have you been attached to the "Chicago"?

A. Since March 9, 1931.

Q. Were you on the "Chicago" on the morning of the collision?

A. Yes.

Q. Where were you at 8 o'clock?

A. In the forward engine room.

Q. Were you on duty?

A. No.

Q. What were you doing in the forward engine room?

A. I was reading the press news.

Q. How did you happen to be in the forward engine room off duty?

A. I merely went down to look over the engine room, that is all.

Q. Had you been on duty previously that morning?

A. I had been on the 4 to 8 watch.

Q. Had you had breakfast?

A. Yes.

Q. And then come back to the engine room?

A. Yes.

Q. Were you looking over the press sheet?

A. Yes.

Q. You had no particular duties at that time?

A. No.

Q. Did you pay any particular attention to what the engines were doing?

(Testimony of Frank P. Davenport.)

A. At the time I came back to the engine room?

Q. Yes.

A. No.

Q. You did not see?

A. No.

Q. Was your attention called at any time to an order received in the engine room from the bridge?

A. It was.

Q. When?

A. Some time after 8 o'clock, I did not observe the [364] exact time.

Q. What order did you observe?

A. Emergency full speed astern.

Q. What did you do?

A. I started the main circulator and told the throttle men to open up, to give her everything they had, and after I started the main circulator I assisted him on the throttle for he was logging his bells.

Q. Why did you take on No. 4?

A. Just merely to assist him, that is all.

Q. What?

A. Merely to assist the throttle man and see that he had her full astern.

Q. How did the engines do after the throttle was opened up, as you say?

A. He started going astern.

Q. Did you feel the collision?

A. Yes.

(Testimony of Frank P. Davenport.)

Q. Do you know what the engines were doing at the time of the collision?

A. I know approximately what they were doing.

Q. What were they doing?

A. Doing better than 100 revolutions.

Q. I did not get that.

A. Better than 100 revolutions astern.

Q. Is it unusual for you to be in the engine room off duty?

A. No.

Q. How does that happen, just explain?

A. Well, I assisted the chief machinist's mate in the engine room, looking out for the work and I would go down lots of times when I was off watch and see if anything needed to be done.

Q. When you were off watch to see if anything was to be done?

A. Yes.

Miss PHILLIPS: That is all.

#### Cross Examination

Mr. LILLICK: Q. You were on duty from 4 to 8 that morning?

A. Yes.

Q. And had been on duty for four hours?

A. Yes. [365]

Q. That morning you went down to read the press news instead of to help in the engine room?

A. Merely to read the press news and look around to see if anything was to be done.

Q. Was the man on the throttle a pal of yours?

(Testimony of Frank P. Davenport.)

A. No.

Q. Who was he?

A. Just a shipmate, a man who worked in this engine room.

Q. What was his name?

A. Pugesla.

Q. Who else was in the engine room when you went down there shortly after 8 o'clock?

A. You mean besides the men on watch?

Q. Besides the men on watch?

A. No one that I recall.

Q. How often did you go down as you have stated—every day?

A. Possibly every day, it is not a routine but it is my place of work, and lots of times I just go down there to look around.

Q. Where did you get the press news that you were reading?

A. I don't remember if someone gave it to me up in the mess hall, or whether it was delivered to the engine room that morning.

Q. Did they deliver the press news in the engine room while the men were on duty?

A. Possibly give it to the messenger of the watch.

Q. Will you answer the question I just asked you. May I have the question read?

The COURT: Read the question.

(Last question repeated by the reporter.)

A. No.

(Testimony of Frank P. Davenport.)

Mr. LILLICK: Q. You mean while the men are at the throttle they did not deliver to them press news, did they?

A. No.

Q. Did you take the press news that you had that morning down to read it to Pugesla?

A. Did I take it down for him to read?

Q. Yes.

A. No.

Q. You were reading it to him were you not?

A. No.

Q. What time does the press news come out on the "Chicago" in the morning?

A. Some time before breakfast, I don't know, I could not [366] say what time.

Q. What time did you leave your 4 to 8 watch?

A. What time?

Q. What time did you leave your 4 to 8 watch?

A. About 20 minutes of 8.

Q. I understand that you had your breakfast before you went back?

A. I had.

Q. Who relieved you?

A. Birchmire, chief machinist's mate.

Q. So that you had left the engine room at 20 minutes to 8?

A. Yes.

Q. You had gone to the mess hall and had your breakfast?

A. Yes.

(Testimony of Frank P. Davenport.)

Q. Got the press news and then gone on back?

A. Yes.

Q. Do you remember anything that was in the press news that morning?

A. No.

Q. You have no recollection of any of the items of news?

A. No, in fact I do not believe I had completed reading it. I don't think I had read more than a couple of articles.

Q. Were you standing just beside this throttle man?

A. No.

Q. How far away from him?

A. I would say about 10 feet.

Q. Sitting down or standing?

A. I was sitting down.

Q. To whom were you talking?

A. I was not talking to anyone.

Q. Will you tell me as exactly as you can what minute it was that you got into the engine room?

A. I would say between five and ten minutes of eight.

Q. Between five and ten minutes of eight?

A. Yes.

Q. While you were helping Pugesla who took the time on the engineer's bell book?

A. The bells?

Q. Yes.

A. Pugesla did.

(Testimony of Frank P. Davenport.)

Q. Do you know whether he logged them just as the signal rang from the bridge?

A. The emergency full speed astern bell?

Q. Any of them that were given. During that time?

A. While I started the main circulator he was executing his order [367] on the engine. At the time I got the main circulator started he had done this, and I took the throttle and he logged the bells himself.

Q. How long would you say it was after the signal came, emergency full astern, before he logged the time?

A. I would say about a minute.

Q. I would like to have you go over for me just exactly what you did when the emergency full speed astern signal came and exactly what Pugesla did, in your own language?

A. As I heard the emergency full astern I got up and started the main circulator and told Pugesla to open up the engine full astern, to give her everything it had; as I got the main circulator started he had his throttle shifted over from ahead to astern, and then I took the throttle and he logged his bells.

Q. By saying that you took the throttle you do not mean that you took it in your hands?

A. I did take it in my hands, the throttle wheel in my hands.

Q. Was he an experienced man, that you helped him at the throttle?

(Testimony of Frank P. Davenport.)

A. No.

Q. Were you on the throttle when the next order came down?

A. No.

Q. How long was it after the emergency full astern until the next order came down?

A. I don't know. As soon as the crash came, the circuit breakers went out on the generators and I ran back on the shaft platform to see what could be done back there.

Q. How long after the emergency full speed astern was it, in your opinion, until the impact was felt in the engine room?

A. About one minute.

Q. How was the emergency full speed astern signal given, that you heard that morning?

A. It was given by two full speed astern bells.

Q. And it is your recollection, when Pugesla entered that in the [368] book, that is the one he entered in the book?

A. As far as I know it is.

Mr. LILLICK: That is all.

#### Redirect Examination

Miss PHILLIPS: Q. Where is Mr. Pugesla now?

A. I don't know.

Q. Has his term of enlistment expired?

A. Yes.

Q. He is no longer with the ship?

(Testimony of Frank P. Davenport.)

A. No.

Q. On direct examination you said something about the engines doing better than 100 astern. What did you mean by the words "better than 100"?

A. I mean making more than 100 revolutions per minute astern.

Miss PHILLIPS: That is all.

#### Recross Examination

Mr. LILLICK: Q. As I understand it Mr. Pugesla is not available?

Miss PHILLIPS: No, he is not available. The forwarding address which he gave, apparently he had gone from there, and mail comes back from the forwarding address that he had, so we have not been able to locate him.

Mr. LILLICK: Q. Are you able to tell me whether this is the engineer's bell book record that Pugesla had that morning?

A. Yes, that is like it. Let me look a little closer. Yes, that is it.

Q. Have you any recollection of yourself having seen it that morning to look at it after the collision?

A. Look at it after the collision?

Q. Yes.

A. No.

Q. You only know that this was the record that he had at that time?

A. That is the one he had, because I signed it myself.

Q. Where is your signature?

(Testimony of Frank P. Davenport.)

A. That is my signature on the 4 to 8 watch.

[369]

Mr. LILLICK: We offer this as our next exhibit.

The COURT: It will be received as Respondent's Exhibit 7 in evidence.

#### Further Redirect Examination

Miss PHILLIPS: Q. Mr. Davenport, you signed this preceding one, you say your name, Davenport appears on it. Was that because you were the officer in charge of this engine room for the preceding watch?

A. I was machinist's mate in charge of the forward engine room watch.

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#### WILLIAM P. BIRCHMIRE

called for the United States, sworn:

Miss PHILLIPS: Q. Will you give us your full name?

A. William P. Birchmire.

Q. What is your occupation?

A. Chief machinist's mate.

Q. In whose employment?

A. The United States Government, Department of Navy.

Q. How long have you been in the Navy?

A. 16 years last August.

(Testimony of William P. Birchmire.)

Q. How long have you been a chief machinist's mate?

A. Going on 15 years.

Q. Are you attached to any vessel?

A. Yes.

Q. What vessel?

A. The U. S. S. "Chicago."

Q. When did you join the "Chicago"?

A. July 28, 1932.

Q. Were you on the "Chicago" on the morning of the collision?

A. Yes.

Q. Were you on duty?

A. Yes.

Q. When did you go on duty?

A. 7:40.

Q. Where was your station?

A. Forward engine room.

Q. Which engine room is that, No. 1 or No. 2?

A. No. 1.

Q. What are your duties in charge of the forward engine room?

A. To see that all orders are executed, and to look after the [370] machinery in general.

Q. Which throttle men were stationed in No. 1 engine room?

A. Cumbie and Pugesla.

Q. Now what can you say of the condition of the engine room upon your taking it over that morning at 7:40, the general condition there?

(Testimony of William P. Birchmire.)

A. At the time I took it over, everything was running along smoothly, everything was in ordinary condition.

Q. Do you remember what speed the engines were making, or were working up to at the time you came on duty?

A. We had a standard speed then of 173 revolutions.

Q. Mr. Birchmire, did you feel the collision?

A. Yes.

Q. Do you know what the engines were doing at the time of the collision?

A. Just a few moments before I noticed the revolution counter and it was about 120 revolutions astern.

Q. Astern?

A. Yes.

Q. Are you sure about that, that she was making 120 revolutions astern?

A. In that vicinity, it was nearly 120 revolutions astern.

Q. You said "a few moments before." The word "moments" is an ambiguous one. In what sense do you mean, a moment of 60 seconds, a few moments of 60 seconds?

The COURT: How long would you say a few moments was?

A. Well say perhaps five or ten seconds.

Miss PHILLIPS: Q. You did not mean moments in a sense of minutes?

(Testimony of William P. Birchmire.)

A. No.

Q. Now, Mr. Birchmire, what were you doing during the interval between the time, let us say, that you took over the watch, and the time of the collision?

A. Well, I had been around the engine room observing all the machinery in operation at that time.

Q. Do you have any distinct recollection of looking at the engine [371] room indicator let us say between 8 o'clock and the moment before the collision?

A. I had not noticed them just before that. We had a bell, I remember—

Q. The question was, have you any distinct recollection of looking at the engine room indicators between the time you saw them around 173 and the time you saw them going astern a few seconds before the collision. That is the question I put to you.

A. No.

Q. You have not any distinct recollection?

A. No.

Q. Have you any memory now of what you were doing during the five or six minutes before the collision?

A. No.

Q. Were you working at something?

A. Yes, I had given more steam to the main circulator which runs on any stop bell that we have.

(Testimony of William P. Birchmire.)

Q. Did you take any logs that morning?

A. Did I make what?

Q. Did you carry along the engine room log?

A. Yes.

Q. For No. 1 engine room?

A. Yes, you see I am responsible for everything that is written in the four hours that I have charge of the watch.

Q. I wonder if we are talking about the same thing. What is your duty in regard to bell books? Do you make any entry in the bell books?

A. No.

Q. You do not?

A. No.

Q. When you looked in the engine room at 12 o'clock, what did you do with the bell books?

A. I had to sign the sheet or bell sheet at the end of the watch.

Q. That would be the bell sheet for No. 1 and 4?

A. Yes.

Q. Did you sign them?

A. Yes.

Q. Those two sheets?

A. Yes.

Q. Is this your signature on these two sheets?

A. Yes.

Q. Mr. Birchmire, when you left the engine room what did you do with these sheets?

(Testimony of William P. Birchmire.)

A. These sheets continued on until the end [372] of the day or until they are filled up, and then they are taken up.

Q. Have you ever seen them since the time you left the engine room and the time of seeing them in court today?

A. No.

Q. Going back to the afternoon of the log of the No. 1 engine room, did you have any log separate from these bell sheets that I have referred to?

A. Yes.

Mr. LILLICK: Where is that?

Miss PHILLIPS: I am told that that log is not here. It should have been here. I will take that up later. I will have to finish with this witness by deposition. I am sorry. You may cross examine.

Mr. LILLICK: I would prefer, if I may, to cross examine after Miss Phillips finishes her examination of the witness.

Miss PHILLIPS: All I will do will be to tender that to Mr. Lilliek as far as cross examination. My direct examination is now finished.

Mr. LILLICK: As I understand it, you will offer the log by the witness?

Miss PHILLIPS: I will try to get that log.

#### Cross Examination

Mr. LILLICK: Q. Did you look over these two engineer bell books before you signed them Mr. Birchmire?

A. Yes.

(Testimony of William P. Birchmire.)

Q. And from your knowledge then they were correct, were they?

A. Yes.

Q. In other words, by signing them you verified to your superior officers that the records of the men under you were true and correct records?

A. Yes.

Q. Can you tell me whether you remember on No. 4 engine sheet that the man in charge of No. 4 engine turned his record over to you with the erasure at 0805 upon it?

A. I could not say. [373]

Q. You agree with me, do you not, that the line upon which appears 0805—I will have to ask you to tell me what that signal is.

A. That signal is emergency full astern.

Q. It is a capital I, capital I, capital B. To repeat the question you agree with me, do you not, that the line upon which appears 0805, full speed reverse, 988,582, has at least two erasures upon it, do you not?

A. Yes.

Q. Possibly three, on account of the 0805?

A. There are only——

Q. I will ask you to look at it with a glass and see whether or not you do not agree with me that an erasure has been made upon the place where “05” has been written?

A. Yes.

(Testimony of William P. Birchmire.)

Q. There has been an erasure there and there has been another erasure where the signal full speed astern appears, is that not right?

A. That is emergency full speed.

Q. That was erased?

A. Yes.

Q. You agree with me, do you not, that following the figures "582" something has been erased?

A. It looks to me like it has been marked through here.

Q. Either marked through or erased?

A. Yes.

Q. Do you know now whether that erasure was on the sheet when you signed it?

A. I could not say.

Q. You have no recollection of it at all?

A. No, none.

Q. Your instructions to your men are never to erase a record of this sort are they not?

A. Yes.

Q. And upon the engineer's bell book which is in evidence appears "Alterations or erasures are not permitted, necessary corrections shall be made by a note written across blank lines of the record?"

A. Yes.

Q. That is part of the instructions that you attempt to see that these men under you carry out?

A. Yes.

Q. You now have no independent recollection of that having been [374] erased before you signed it?

(Testimony of William P. Birchmire.)

A. No.

Q. However, insofar as your testimony goes, these two sheets, when you signed them were correct records of what went on in that engine room?

A. Yes.

Q. With respect to the throttles and the signals?

A. Yes.

Q. Do you remember a man coming into the engine room that morning with a copy of the radio news on the "Chicago" somewhere around 8 o'clock?

A. Yes.

Q. Who was that?

A. Davenport.

Q. Do you allow men like that to come in and talk to your men while they are on duty?

A. Well, he in particular had permission to come into the engine room at any time he wishes. I am in charge of the engine room and he is machinist's mate first class directly under me, and he takes general charge under me in the engine room.

Q. So that he comes whenever you are there?

A. Yes.

Q. And when he comes in and brings with him a copy of the radio news, he sits there and reads it?

A. I never checked up on him that close.

Q. He came in that morning as one of the boys to see his friends at the throttles and chatted to them?

Miss PHILLIPS: That is an unworthy suggestion, one that is not warranted, and I object to it.

(Testimony of William P. Birchmire.)

Mr. LILLICK: I did not mean it to be unworthy. It was proper cross examination as I understood it, but I would like to have the question reread and if it be an improper question I will withdraw it willingly.

The COURT: Read the question. (Last question repeated by the reporter.) I suppose you could have said Did he do that, rather than make it a statement of his.

Miss PHILLIPS: That is my point.

Mr. LILLICK: Q. Did he do that?

A. No, he did not. [375]

The COURT: You saw him?

A. Yes.

Q. He did not talk to the other men at all?

A. No.

Mr. LILLICK: Q. He just came in the room with a copy of the radio news that morning and went over and sat down by himself. Is that your testimony?

A. Yes.

Q. How long was he there before the collision?

A. Well, he came down about—I relieved him at 7:40 and he went up and got his breakfast, and I don't know, I could not say what he did while he was out of the engine room, but he was down in ten minutes later.

Q. A few minutes before 8?

A. Yes.

(Testimony of William P. Birchmire.)

Q. You do not wish us to understand that after getting into the engine room a few minutes before 8, up to the time of the collision, he did not talk to anybody, do you?

A. Well, he did not as far as I know.

The COURT: The cross examination will have to go over until tomorrow. We will take a recess now until tomorrow morning at 10 a. m.

(Thereupon an adjournment was taken until tomorrow, Wednesday, March 21, 1923.) [376]

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Tuesday, March 20, 2 P. M.

Miss PHILLIPS: At this we will finish with the cross examination of Mr. Birchmire.

(Thereupon the cross examination of William P. Birchmire was resumed in Room 214, out of the presence of the Court.)

### WILLIAM P. BIRCHMIRE

#### Cross Examination Resumed

Miss PHILLIPS: At this time I would like to have the record show that I have considered my objection to Mr. Lillick's question to the witness and I think I am absolutely wrong in the objection. I think his question was within the limits of cross examination.

Mr. LILLICK: May we have the rough log of Mr. Birchmire now?

(Testimony of William P. Birchmire.)

Miss PHILLIPS: As to that, I think you should ask some questions further about the rough log. He was referring to some kind of a different record. I will say I found the original of Mr. Kershaw's log during the noon hour, which was in my possession, so we do not need to use the photostat. If you will question Mr. Birchmire further about the kind of log he kept, you will ascertain that he did not keep such a log as that, and then you can ask him what he did and what the practice was.

Mr. LILLICK: The rough log of Kershaw having been handed to me by counsel for the United States, I will ask that this be substituted for the photostat which was marked Respondent's Exhibit 6.

Miss PHILLIPS: I should think it would be much better to have the original. There is no necessity of having a photostat copy introduced in evidence when the original is at hand.

Mr. LILLICK: Then by consent of counsel Respondent's Exhibit No. 6 is withdrawn now and the rough log which was produced we ask to be marked Respondent's Exhibit No. 6 in lieu of the other.

[377]

(The original rough log of Kershaw is marked also Respondent's Exhibit 6.)

Q. Mr. Birchmire, reference has been made to a rough log that you kept in addition to the engineer's bell book record. Did you keep such a log on October 24, 1933?

(Testimony of William P. Birchmire.)

A. I kept just what is an ordinary sheet of paper for items coming up which were not in the general routine.

Q. Have you that sheet of paper upon which you made entries that morning?

A. I have not.

Q. What did you do with it after you had made it up, if you did make it up that morning?

A. I turned it into the log room, that is the engineer's log room.

Mr. LILLICK: We ask that that be produced, if it is possible for the United States to produce it.

Miss PHILLIPS: You said in the log room. Whose room is that?

A. The engineering office.

Miss PHILLIPS: I saw Chief Engineer Colton during the noon hour and he said that the engineering rough log was kept by the senior officer on watch, in this case, Mr. Kershaw; the memorandum coming into his office by the assistant on watch in the position of Mr. Birchmire is never retained, and is a record which comes in—I don't know what kind of a record you could call it—You can question further on that, but when I asked him whether or not that was in existence he said no, he never kept such pencil sheets as that. But you can ask him further about that because Mr. Colton will be on the stand tomorrow morning.

Mr. LILLICK: Insofar as your knowledge goes, you turned that log into the office of the engineer

(Testimony of William P. Birchmire.)

that morning, or did you turn it over to Kershaw?

A. That morning I turned it into the log room.

Q. It did not go to Kershaw, it went to the log room? [378]

A. He gets that and writes up his log; you see I am under his charge, and he takes that sheet and if there is anything different other than in the engine room sheet he makes his entries.

Q. Where is the log room on the "Chicago"?

A. The log room is on the main deck of the "Chicago".

Q. You took that sheet up to the log room?

A. No, I did not.

Q. What did you do with it?

A. I sent it up by messenger.

Q. In any event, you did not turn it over to Kershaw?

A. No, not personally.

Q. What time did you send it up by messenger—when you left the watch?

A. At the end of the watch.

Q. You left the watch that day at 12 o'clock, at noon?

A. At twelve o'clock.

Q. Mr. Birchmire, I would like for you to come over to the window with me if you will, and I will ask you to look at the "5" in figure "805" on the engineer's bell book No. 4, Respondent's Exhibit No. 7, and with these glasses tell me whether you do not see a figure "6" under the "5" that was

(Testimony of William P. Birchmire.)

either written over it or the other figure erased and the "5" written on it?

A. I could not say what that is.

Q. Would you mind stepping up to the window again, Mr. Birchmire, and I will ask you to look at the same sheet and ask you to look through the glass at the signal entered for 8:05 on the same line and tell me what, in your opinion, was written below the signal "Standard backward emergency reverse" and "B"?

A. That could be an "F".

Q. What would "F" as a character represent?

A. Full back.

Mr. LILLICK: That is all.

#### Redirect Examination.

Miss PHILLIPS: Q. Just one more question, Mr. Birchmire. Counsel on cross examination asked you regarding the presence of Davenport in the engine room that morning. You said something [379] about allowing Davenport freedom in that regard. Did you have any reason for that?

A. I had a reason that he was a very conscientious man and he represented me at all times when I was away.

Q. Have you finished?

A. Yes.

Q. Who was on the ship first, you or Davenport?

(Testimony of William P. Birchmire.)

A. Davenport.

Q. When you came on board the ship what was Davenport's position?

A. In charge of the forward engine room, No. 1 engine room.

Q. Did you take his place?

A. Yes, I relieved him of that duty.

Q. Then what position did he take?

A. He was given an assistant under me.

Q. What is your position at the present moment on the "Chicago"?

A. Before I was transferred to the hospital I was in the machine shop in charge of the machine shop.

Q. My question is, what is your position at the present moment? You are not in the hospital now. What is your position now?

A. At the present time I am just back on temporary duty.

Q. Who is in charge of the forward engine room now?

A. Davenport.

#### Recross Examination

Mr. LILLICK: Q. Mr. Birchmire, may we rely on the entries in the engine bell book No. 4 as they now are, as being correct to the best of your knowledge?

A. Yes.

(Testimony of William P. Birchmire.)

Q. May we rely also upon the accuracy of the record as shown in engineer's bell book No. 1?

A. Yes.

#### Further Redirect Examination

Miss PHILLIPS: Q. Mr. Birchmire, do you know the particular method followed by every one of these men in making their entries on that occasion?

A. No, I could not say.

Q. I am not sure that I asked you this question anywhere along the line, whether you made any entries in the bell book yourself [380] except your own signature. Did you make any of these entries?

A. No, I did not.

Miss PHILLIPS: I think that has been covered, but I am not sure.

Mr. LILLICK: That calls to my mind another question: Are there any instructions given to the "Chicago" men as to when they should put down the time at which the signal comes from the bridge, and when they enter it in the engineer's bell book record?

A. The order is executed, then log the time in the bell sheet.

Q. Now is that instruction to register in the bell sheet when the order has been executed, or when the order comes down from the bridge?

A. At the time of execution.

(Testimony of William P. Birehmire.)

Q. Then where an entry is made in the engineer's bell book at 8:01 the time in the log book is the time when the order at 8:01 has been executed?

A. Yes.

Mr. LILLICK: That is all.

Further Redirect Examination

Miss PHILLIPS: Q. But there again you do not know the particular method the particular bell book man would follow individually. You are just testifying to instructions?

A. Yes.

Filed June 19, 1934. [381]

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Wednesday, March 21, 1934.

Miss PHILLIPS: Your Honor, at this time I would like to state to the court that yesterday after the recess of court I found I had in my files the original rough engine log, the photostatic copy of which was used during the testimony of the witness Kershaw, and I ask leave now that the photostat be withdrawn and the original substituted.

Mr. LILLICK: No objection.

The COURT: If there is no objection, such will be the order.

Miss PHILLIPS: Counsel and I agreed, in the interest of saving the court's time and the completion of the case before the "Chicago" sails, it would

be better to proceed yesterday afternoon and finish with the testimony of the witness Birchmire. We did so, and we also called two other witness and disposed of them in the afternoon.

I would like also to say that I came to the conclusion at the noon hour yesterday that I was quite in the wrong in objecting to Mr. Lillick's question to Mr. Birchmire; he was right and I was wrong. I do not know whether I so stated when I finished Mr. Birchmire's testimony,—I don't know as I used the word "apology" but I intended to convey that to your Honor.

Mr. LILLICK: Might I say in connection with that, that I feel that it is very unusual for counsel on the other side to do what Miss Phillips just has done, and I wish to express to Miss Phillips before your Honor my appreciation of the manner in which she has treated counsel on the other side, and that is borne out by Miss Phillips' attitude.

Miss PHILLIPS: The best way to admit a mistake is to own up to it. [382]

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CARL W. BREWINGTON

called for the United States, sworn:

Miss PHILLIPS: Q. Will you give your full name, please?

A. Carl W. Brewington.

Q. What is your occupation?

A. Naval officer.

(Testimony of Carl W. Brewington.)

Q. Of what rank?

A. Lieutenant commander.

Q. Will you please state what your training in your business has been?

A. In my present assignment of duty?

Q. What is your present assignment of duty?

A. Chief engineer of the U. S. S. "Louisville."

Q. How long have you been in the Navy?

A. Twenty-five years.

Q. Are you a graduate of Annapolis?

A. I am.

Q. What previous experience had you had prior to joining the "Louisville", just state briefly.

A. Well, I had had gunnery experience in 14-inch turrets and broadside gunnery experience, fire control, submarine, boiler division, auxiliary division and senior assistant in engineering of battle ships.

Q. Did you participate in a test by the "Louisville" on March 6th, 1934?

A. I did.

Q. In what capacity?

A. As chief engineer, I am also present at the control engine room in getting away and coming to anchor, at general drills and when anything out of the ordinary is going on.

Q. You say you participated in this test. Where were you stationed?

A. I was stationed at the control board in the after engine room actually reading the revolution

(Testimony of Carl W. Brewington.)

counter, noting the times that bells were received and seeing that they were answered.

Q. What boilers were in use when this test was made?

A. Boilers No. 7 and 8.

Q. What horse power was available upon these boilers?

A. With the size burner tip that we were using, very close to 25,000. [383]

Q. What burner tips were using?

A. We were using No. 3208, the next to the largest size.

Q. The next to the largest size?

A. Yes.

Q. What is the largest size?

A. The largest size that we have in 3008.

Miss PHILLIPS: Will you read the last two questions and answers to the court?

The COURT: Read the record.

(The record was read by the reporter.)

Miss PHILLIPS: Are those figures right?

A. The first figure was 3208, and the second, 3008.

Q. How many men were at the throttles?

A. There was one at each throttle, four in all.

Q. Did any of the engine room staff know that the test was being made?

A. The watch officer did, probably the throttle man on the control engine where I was standing did, but the remainder of the engineering force were not notified of any special test being made.

(Testimony of Carl W. Brewington.)

Q. What number of men were on duty in the whole engine room plant?

A. There were 15 men in the two engine rooms, and seven in the fire room.

Q. Is that the normal number, or an unusual number?

A. That is the normal number.

Q. I show you United States Exhibit No. 5. You will observe upon the two minutes order, that is the order—that is, the test began at zero hour, and at two minutes after there was a stop order. What method of deceleration was used?

A. No method of deceleration was used. We merely closed the throttles.

Q. Merely closed the throttles?

A. Yes.

Q. Was there any bleeding of steam from the head engines into any of the astern engines?

A. No, there was not.

Q. Do you know the cruiser “Chicago”?

A. I do. [384]

Q. Can you compare the two engineering installations of the cruiser “Louisville” and the cruiser “Chicago”?

A. They are identical. In fact we exchange parts when one of us needs them, from another ship.

Miss PHILLIPS: You may cross examination.

#### Cross Examination

Mr. LILLICK: May I see the exhibit please, Mr. Brewington?

A. Yes.

(Testimony of Carl W. Brewington.)

Q. One of the questions asked you by Miss Phillips was with reference to the stop order two minutes later. My notes are not very full with respect to it. Will you show me on Exhibit 5 the stop order to which reference was made?

A. It is right here. It was ordered stop at zero time, and we closed the throttle then.

Miss PHILLIPS: It is apparent that I made a mistake there in the reference, that is, the ship running at zero hour, the stop order was given?

A. Was given.

Q. I think my tongue stated the wrong thing.

A. We started at zero time and run for two minutes.

Mr. LILLICK: My own tongue has slipped so often that it is really gratifying to hear, once in a while someone else does it.

Q. Mr. Brewington, the stop order at zero hour indicated upon Exhibit 5, came at a time when the "Louisville's" engines were running at what speed?

A. Eighteen knots.

Q. And the next order after that was two-thirds, was it, in your experiment or test?

A. It was two-thirds.

Q. How long after the stop order when she was running at 18 knots was it that the two-thirds ahead order was given?

A. Two minutes later.

Q. And following the two-thirds speed order two minutes after the engines had been running at 18 knots, what was the next order?

(Testimony of Carl W. Brewington.)

A. Ahead standard, given at three minutes. [385]

Q. And then following that, and this is only for an explanation to me of the chart, your next order was what and given at what time?

A. The next order was engine full speed astern, given four minutes after zero time.

Q. Do you know when the watch officer was notified that the test was to be made?

A. Yes, when I came down to the engine room with my data sheet I told him we were going to have a test.

Q. How long after that did the test actually commence?

A. Within ten minutes.

Q. The watch officer to whom you told this was in charge of which boiler room?

A. He was in charge of all engine rooms and all fire rooms, his station being at the control board in the after engine room.

Q. Did the watch officer leave you after you told him that a test was to be made?

A. No.

Q. He stood beside you from then on?

A. He stood right beside me from then on.

Q. You are sure he did not go from the engine room in which you were then to another engine room?

A. He did not.

Q. Which engine room were you standing in when you made the test?

(Testimony of Carl W. Brewington.)

A. In the after engine room.

Q. Did you come down from the deck straight to the after engine room, Mr. Brewington?

A. I had been conferring with the captain about the test and he said it would start in about ten minutes, so I went down to the control board in the after engine room.

Q. And stayed in that same position from then on?

A. I did.

Q. It is unusual, is it not, for the chief engineer to go into the engine room and make such a test?

A. Not at all unusual.

Q. How often do you do that?

A. Well, I am always in the engine room when we get under way, when we come to anchor, when we are making high speed. [386]

Q. I did not ask you that. I asked you whether it was not unusual to make tests.

A. No, we have lots of tests that we make, in fact they are almost routine.

Q. Had you ever made a test just like this before?

A. Not just like this, no.

Q. When you went into the after engine room, the throttle man closest to you, as I understand you, knew that you were about to make a test?

A. Yes.

Q. How close was that throttle man from the throttle man operating the other engine?

(Testimony of Carl W. Brewington.)

A. About 12 or 15 feet.

Q. The other throttle man could see you too, could he not?

A. He could.

Q. He could see you taking the time and as you entered them and the notes you were making?

A. Yes.

Q. There can not be any question, can there, but that all of those in your sight in the after engine room knew that the test was being made?

A. It is entirely possible.

Q. In other words, it was certain, was it not, from your own observation?

A. No, I would not say it was certain because I frequently conduct tests, or conduct them so often that they probably do not pay any attention at all to them. I did not tell him we were making a special test. This is only one of those times that we were down in the engine room making a test.

Q. In any event, the throttle man who was twelve feet away from you, undoubtedly knew you were making a test. You have not any question about that in your mind have you?

A. No, not at all.

Q. Can you give me the duties of the 15 men in the two engine rooms; so if they have the same duties, give me only the duties of the men in the after engine room.

A. The 15 men are divided, seven in one engine room and 8 in the other engine room. The engine

(Testimony of Carl W. Brewington.)

room having eight there was an extra man to attend the generator [387] and associated machinery. For ship working purposes there are seven men for each engine room. There would be one on each throttle; taking the after engine room there would be a machinist's mate in charge of the watch, that is chief machinist's mate, there would be a messenger, a man on the phone, and the remainder of them are oilers on the lower grating.

Q. Is one of the throttle men in the after engine room the pace maker?

A. Yes, he is.

Q. So that in the engine room in which the test was made by you, the pace maker was in that engine room?

A. Yes.

Q. Was that pace maker the throttle man who was beside you?

A. Yes.

Q. Did you notice whether the other throttle man at the other throttle—let me identify him—the pace maker was at what engine?

A. The No. 2 engine throttle.

Q. And the other engine was No. 3?

A. Was No. 3.

Q. At the time you made the test did the No. 3 throttle man have anyone with him at the throttle?

A. No.

Q. Did both of these throttle men keep an engineer's bell book at the time?

A. Yes.

(Testimony of Carl W. Brewington.)

Q. Did the No. 3 throttle man, while you were making that test, have another man entering his bell signals in his bell book?

A. I do not remember that. When the messenger is not busy he does that to help him out, but I don't remember whether he was making entries at the time in the bell book or not. Sometimes he does and sometimes he does not.

Q. Did you have, on the "Louisville" there, a third man to enter, not the messenger, but a third man to work at the throttle as one of your throttle men?

A. Not at the throttle as a throttle man; when we are coming to anchor I bring a yeoman down from the log room to take care of the bell book for No. 2 engine, and the messenger takes care of the bell book for No. 3 engine. [388]

Q. You have heard, have you, Mr. Brewington, that at the time of the collision on the "Chicago" there was another man in the after engine room named Haynes with the No. 3 throttle man?

A. No, I have never heard that.

Q. You did not know anything about that?

A. I do not know anything about that at all.

Q. It is not usual on the cruisers to have men not a part of the actual working force at the time, in the engine room, is it?

A. No, not unless there are some of the men attached to the engine room that are off watch overhauling the machinery.

(Testimony of Carl W. Brewington.)

Q. But unless they are overhauling the machinery they are not permitted to be in the engine room loitering around talking to the other men are they?

A. No.

Q. That is not a part of the regulations, is it?

A. Well, it is not according to good practice, that is not in the regulations.

Q. In other words, they would not even mention such a thing in the regulations because it is not good practice and it ought not to be done?

A. It should not be done.

Q. You testified there was no bleeding of steam when you reversed, if I understood your testimony correctly.

A. There was not in the reverse, as I understood the question, which was, when we got the order to stop did we put the steam on the astern turbine and bring the shaft to rest quicker, and we did not.

Q. I am glad you cleared it up because I did not understand it. When you actually put your engines in fullspeed reverse, emergency full speed reverse, I think it was, that action did have to be taken did it not?

A. Oh, yes.

Q. Will you explain to us what is done when you carry out that maneuver?

A. On emergency full speed astern, after shutting off steam on the ahead turbine you would merely open your astern throttle as quickly as you

(Testimony of Carl W. Brewington.)

could. Your steam pressure, [389] it will not be dropped on the "Louisville" below 200 pounds, and your pressure is such you could open the astern throttle—in other words, the speed with which you can open the astern throttle is determined by the drop in the steam pressure.

Q. On this occasion, from your diagram, Exhibit No. 5, your full speed emergency astern came after the last preceding order ahead standard?

A. Yes.

Q. Can you tell from looking at this exhibit what the engines in revolutions were making when the order ahead standard was changed to emergency full speed astern?

A. Yes, they at that time were making 132 or 133; the point on the curve there was actually cut by that number of revolutions, 132.

Q. So that the 130 on the margin of this exhibit indicates by the heavy line that it had actually gone to 132?

A. Yes.

Q. How long, if you remember—perhaps you can tell from the chart—how long, if you remember, unless this distance between ahead standard and full speed emergency astern had no relative count that you took then—can you tell me was it until, from 132 revolutions ahead, the engines actually came to a stop, that is, the propellers stopped turning. Can you tell me that?

A. Thirty seconds.

(Testimony of Carl W. Brewington.)

Q. Thirty seconds?

A. Yes.

Q. So that the propellers from 130 revolutions a minute came down to stop in 30 seconds?

A. Yes.

Q. How long after that was it until they were going emergency full speed astern?

A. In one minute and a half after that they were making 108 revolutions astern.

Q. In other words, if my understanding of your answer is correct, if you add thirty seconds to a minute and thirty seconds, the engines were going astern at 108 revolutions per minute, two minutes after the engines had been going 132?

A. Yes, that is correct.

Q. Can you, from your knowledge of the manner in which the propellers [390] operate on the "Louisville", tell me what effect such a maneuver has with respect to the time when the vessel's hull itself stops going through the water ahead?

A. No, I could not tell you that because I was not on the bridge or anywhere that I could see the water outside.

Q. When the test was made, Mr. Brewington, was any concurrent test made on deck, do you know?

A. Yes, they were taking data on the bridge and on the deck also.

Q. But you don't know what the result was?

(Testimony of Carl W. Brewington.)

A. I have no first hand knowledge of the result of those tests.

Mr. LILLICK: That is all.

Redirect Examination

Miss PHILLIPS: Q. Mr. Brewington, the exhibit which I have shown you gives times in seconds of all of these orders, doesn't it?

A. It gives the time in minutes and each minute divided into one tenth, so that gives, marks six seconds that you can read.

Q. That is, it is marked off in minutes and six second intervals: Is that correct?

A. That is correct.

Q. So that it is possible to calculate time by referring to the plot itself upon any of these orders given, is it not?

A. Yes.

Q. Or any of the action of the engines?

A. Yes, the action of the engines as far as the number of revolutions they were making at any time.

Miss PHILLIPS: That is all.

Mr. LILLICK: That is all.

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ERNEST BRADFORD COLTON,

called for the United States, sworn:

Miss PHILLIPS: Q. Will you give your full name? [391]

A. Ernest Bradford Colton.

(Testimony of Ernest Bradford Colton.)

Q. What is your occupation?

A. I am a naval officer, engineering officer, U. S. S. "Chicago."

Q. How long have you been in the Navy, Mr. Colton?

A. Twenty years next June.

Q. What rank do you hold?

A. Lieutenant commander.

Q. Speak up so that we can all hear you. We have a lot of noise to contend with.

A. Lieutenant commander.

Q. How long have you been in your present rank?

A. Since March, 1930.

Q. Will you please state what your professional training has been?

A. I am a graduate of the U. S. Naval Academy?

Q. Will you state what ships you have served upon and in what capacity?

A. I have served on four battleships, one destroyer, three tenders.

Q. Submarine tenders?

A. Submarine tenders and the USS "Chicago".

Q. When did you join the "Chicago"?

A. Prior to commission.

Q. She was commissioned in March?

A. March 9, 1931.

Q. In what capacity have you served on the "Chicago"?

(Testimony of Ernest Bradford Colton.)

A. Fourteen months as assistant engineer officer, and the last two years as chief engineer.

Q. Will you just state briefly to the court in what kind of maneuvers you have seen the "Chicago" engage?

A. Engineering runs, gunnery, tactical maneuvers at sea, picking up aeroplanes, and war problems.

Q. Were you on the "Chicago" at the time of the collision?

A. I was.

Q. What was your first information that there was likely to be a collision?

A. The sounding of collision quarters, general alarm. Prior to that I felt the engines backing rather heavily.

Q. Whereabouts were you?

A. In my office, the log room. [392]

Q. Will you just tell me what you did?

A. I felt the engines backing and then I heard general alarm sounded, and this was followed by an announcement from the loud speaker "Collision on the port bow." I looked out at the port which was immediately over my desk and saw a ship heading directly for the "Chicago" and I immediately rushed for the after engine room, my station, but could not get into the after engine room before the ship was struck.

Q. Will you pick out on the model your office, your log office, and then the position of the after engine room?

(Testimony of Ernest Bradford Colton.)

A. My office is right here.

Q. The witness is pointing to a point below the well deck near the catapult. Where is the after engine room?

A. It is on the opposite side—the after engine room extends across, but the entrance I was trying to reach was on the opposite side of the ship about 200 feet away.

Q. Where were you at the very moment the ship struck?

A. Just at the door that leads to the after engine room.

Q. Can you estimate the time that elapsed between the time of the collision and the time you felt conscious of the vibration of the engines?

A. Might I ask whether putting that in the opposite order, I felt the vibration of the engines before the collision?

Q. Yes.

A. I would say that I felt the engines vibrate about 15 seconds before the collision call was sounded, and it would commonly take twenty seconds to get to the after engine room if the passageway had been clear, but on account of the collision call, men were coming through the passageway and going to their stations, and I would say it would take about thirty seconds to get to the engine room.

Q. Have you ever timed yourself in going from your office to the [393] point where you were at the time the ship was struck?

(Testimony of Ernest Bradford Colton.)

A. Yes. After the collision I was curious about how long she really had been backing and I timed myself and it was twenty seconds with the passageway clear to get to the after engine room.

Q. Mr. Colton, would you say that one was conscious of the backing of the engines as soon as they began to back?

A. No.

Q. Just explain it.

A. The engine has to get up at least to I would say 50 revolutions astern before you can feel it, and then the vibration is heavier as they speed up.

Q. How many engines has the "Chicago"?

A. Four.

Q. What type?

A. Westinghouse modified Parsons turbines. They consist of one high pressure, one low pressure and one astern turbine for each shaft. There is also a cruising turbine which is used for slow speed. There are two engines in each engine room, there are two engine rooms, making a total of four engines.

Q. When you say there are four engines, are you including in that an astern turbine and an ahead turbine?

A. There is an ahead turbine, an astern turbine and a low pressure turbine on each engine.

Q. Were you on the "Chicago" at the time of her official trial?

A. I was.

(Testimony of Ernest Bradford Colton.)

Q. What was her maximum speed ahead?

A. Thirty-two and a half knots, 366 revolutions.

Q. How many boilers has the "Chicago"?

A. Eight.

Q. What type, what is the name?

A. Babcock and Wilcox Express type of boilers.

Q. What horse power?

A. I would like to finish that.

Q. I beg your pardon.

A. Water tube boilers formerly known as White Foster boilers.

Q. What is her horse power as represented by one boiler at its full capacity?

A. I would like to answer that this way. [394] The shaft horse power is 107,000 for the eight boilers, which makes nearly 14,000 per boiler, approximately.

Q. What is the maximum horsepower for the eight boilers?

A. On the official trial they developed more than the designed power, they developed actually 107,780 horse power.

Q. What was the designed horse power?

A. 107,000 horse power.

Q. What boilers were in use on the morning of the collision, do you know?

A. Boilers 5 and 6.

Q. When were the boilers last cleaned before the collision?

(Testimony of Ernest Bradford Colton.)

A. The fire sides were cleaned on May 10th and the water sides were cleaned July 21, both 1933.

Q. What was the displacement of the "Chicago" on the morning of October 24, 1933?

A. I can give it to you exactly for October 23, and then make a calculation. It was 11,988 tons when we left San Pedro at 9 o'clock on the morning of the 23rd. We burned 66 tons up to 8 o'clock on the morning of October 24, which gave us 11922 tons I calculated at the time of the collision.

Q. What was her draft?

A. Twenty feet 3 inches on departure from San Pedro, and 20 feet 2 inches at the time of the collision.

Q. Let us have the forward and aft draft.

A. At the time of leaving San Pedro her forward draft was 19 feet 8 inches, and her aft draft 20 feet 10 inches.

Q. How many propellers has the "Chicago"?

A. Four.

Q. Can you give me their diameter and their pitch?

A. Yes, the diameter is 12 feet and the pitch is 11 feet 9 inches.

Q. What horse power is available on the "Chicago" for backing?

A. Two-thirds the power available for going ahead.

Q. Can you compare the "Chicago's" speed going ahead full speed and going astern full speed?

(Testimony of Ernest Bradford Colton.)

A. On the official trial, with eight boilers we made  $32\frac{1}{2}$  knots ahead and 20 knots astern.

Q. How many revolutions does she normally make at full speed [395] astern with two boilers?

A. 110.

Q. How long can you maintain 110 revolutions astern if full power on two boilers is available?

A. Indefinitely.

Q. Will you tell me what is the normal horse power, let us say, to make 8 knots ahead?

A. About 1900 horse power, roughly.

Q. How much horse power is required to make 10 knots ahead?

A. 2400.

Q. Twelve knots.

A. 3900.

Q. Fifteen knots?

A. 7800.

Q. Eighteen knots?

A. 12,000.

Q. Twenty knots?

A. About 14,000. I would not be sure of that with referring to it.

Q. Over 20 knots what horse power is required?

A. We are required to have more than two boilers on, theoretically to make over 20 knots ahead.

Q. In order to make 110 revolutions astern, what horse power is required, how much normal horse power is required on your boilers?

(Testimony of Ernest Bradford Colton.)

A. About 12,000 horse power. I would like to change my answer on 20 knots ahead. I remember the exact figures, 17,000.

Q. Is there such a thing as an order "Emergency full astern" on your ship?

A. Yes, indeed.

Q. What is it?

A. They ring up full speed astern twice, on the emergency, and we are supposed to back her as hard as we can.

Q. Have you a table of engine revolutions of the ship for various speeds with you?

A. Yes, I have it for a clean bottom and also for four or five months out of dock, which was the condition on the 24th of October.

Q. I was going to ask you how long the "Chicago" had been out of dock.

A. She came out of dock on May 24, 153 days.

Q. Have you the engine room tables of revolutions of the first months out of the dock and four to five months out of the dock? [396]

A. Yes.

Q. Are they marked?

A. Yes.

Q. They are marked one month out of dock and four to five months out of dock?

A. Yes.

Miss PHILLIPS: I will offer this table in evidence, as our next exhibit, one month out of dock revolutions.

(Testimony of Ernest Bradford Colton.)

The COURT: It will be received as Government's Exhibit 7.

(The document was marked "Government's Exhibit No. 7")

Miss PHILLIPS: The next one, four to five months out of dock I will offer as the next exhibit in order.

The COURT: It will be received as Government's exhibit 8 in evidence.

(The document was marked "Government's Exhibit No. 8 in evidence.")

Miss PHILLIPS: Q. Mr. Colton, when the ship first reaches any given number of revolutions from lower revolutions, do you know whether the actual speed of the ship lags behind the engine revolutions?

A. It would have to lag behind.

Q. Why is that?

A. On account of the resistance of the water, you would have to make more speed on the engines than the ship is actually making in the water or the ship would never speed up.

Q. Have you made any test recently as to the time it would take on the "Chicago" to bring her dead in the water from any given speed?

A. Well I was present, of course, during the official trial. They went from 32½ knots ahead to twenty knots astern in just over two minutes; two minutes and six seconds, I believe it was. And

(Testimony of Ernest Bradford Colton.)

normally when we are operating with the fleet, picking up aeroplanes at sea, when the cruising speed would be 15 knots, she would get a full speed astern bell and then a stop bell, which would show the [397] ship was dead in the water, and the time of the stop bell has been set several times as two minutes, that is under normal full speed astern, that is not in emergency.

Q. With what boiler power available?

A. Two boilers.

Q. I would like to ask you why it is that you have very frequently had occasion to pick up aeroplanes when you were going 15 knots?

A. That is cruising speed in formation, 15 knots, normal standard speed, that is the cruising doctrine.

Q. I still do not understand why you should be picking up aeroplanes at that speed.

A. We are making that speed when the planes are away from the ship, and the admiral then gives the signal to pick up the planes, each ship acts independently, and the captain wants to pick the planes up as quickly as he can, different ships see how quick they can pick the planes up.

Q. Is that a part of war maneuvers?

A. That is similar to what would be done in war.

Q. That is simulating war maneuvers?

A. Yes.

Q. That is, you mean, under actual war conditions they have to pick up planes quickly at sea?

A. They would.

(Testimony of Ernest Bradford Colton.)

Q. When you get a full astern order, an emergency full astern order, how long does it take before steam actually begins going into the turbines?

A. I would say about five or six seconds.

Q. Why is that?

A. You have to close off the ahead turbine, and that takes about three seconds to close that throttle and about two seconds to open the astern throttle.

Q. Why is it that steam begins going into the astern turbine in such a quick flash of time?

A. You have got 300 pounds of steam going into a vacuum, it is practically simultaneous.

Q. Can you make a comparison as to the length of time required to work, let us say, under an astern order, with the ship going [398] ahead, if you got an order full astern, can you compare the length of time it would take to work from zero to 75 or 80 revolutions astern, let us say, and then from 75 or 80 or 110 or 120 or any other speed?

A. I would like to know first whether that is from the ship going ahead, or stopped in the water.

Q. The ship going ahead.

A. With the ship going ahead it would go faster because you would have more steam available, I would say about 45 seconds to get up to 75 revolutions astern.

The COURT: Q. Would it be going through the water?

A. The ship would still be going ahead and it would take about 15 seconds more to get up to 110 revolutions astern on the engine.

(Testimony of Ernest Bradford Colton.)

Miss PHILLIPS: Q. Does it take you a shorter or longer interval to work to 75 or 80 than it does from 75 or 80 to beyond 100?

A. Of course it becomes more difficult to get the greater speed astern. It is very simple going up to 75 or 80.

Q. Mr. Colton, if the ship is going ahead at a speed of 18 knots, which is standard—I will withdraw that. If your engines are stopped, the ship going ahead and standard speed is ordered from the bridge, 18 knots, what rate of acceleration would follow?

A. This is not an emergency?

Q. I am not saying an emergency, just a standard speed ahead.

A. The standard practice is you have to build up speed, engine speed to five knots at the end of the first minute, to 10 knots at the end of the second minute and 15 knots at the end of the third minute and one minute each for the next three knots, that would be a total of six minutes to get the engine speeded up to revolutions for 18 knots.

Q. Would it make any difference whether a two-thirds bell was given and then a standard bell given after it, at an interval of a minute or so?

A. Not that sort of an interval, no. [399]

Q. What I am trying to get at is this, if your ship, in an ordinary maneuver, gets a stop bell, what does that require the engine man to do?

(Testimony of Ernest Bradford Colton.)

A. Cut the steam off the ahead turbine immediately.

Q. Let us assume the engines are stopped for a little while, and an order standard speed is given, what rate of acceleration would you follow?

A. The routine acceleration table that I have just described.

Q. Suppose the order came two-thirds, and then a little while later, a minute or so more or less standard, what rate of acceleration would you follow?

A. We would follow the same acceleration because we would not be up to two-thirds for two minutes at least.

Q. Now suppose the navigating officer wants full speed ahead, not normal acceleration, but he wants it right away, what would the order be?

A. He would ring full speed ahead twice on the engine room telegraph.

Q. Mr. Colton, what is the substance called hydrecon?

A. It is a hydraulic covering used in the boiler front, it is an experimental material that the Bureau of Engineering has developed after tests, and should reduce the expense of keeping up the boilers.

Q. Do you know whether the "Chicago" has ever used or tested hydrecon?

A. We were in the midst of tests on the day of the collision.

Q. Did the use of hydrecon affect the boiler capacity?

(Testimony of Ernest Bradford Colton.)

A. Oh no, that is just a small amount in front of the boilers, right around the burners.

Q. Did you go down to the engine room that morning after the collision?

A. Oh, yes. I tried to get there before the collision.

Q. What conditions did you find when you arrived there?

A. The engines were backing full speed astern, making about 140 revolutions. The steam had started to drop slightly, about 280 pounds [400] from a normal of 300. Some of the lights were out, but the auxiliary lights were on. All men were at their stations.

Q. What number of men were at their stations that morning?

A. We had eight men on watch in the after engine room, with an officer.

Q. And in the forward engine room?

A. I did not go into the forward engine room at that time, but we had seven men on watch in the forward engine room.

Q. What would have been normal for the forward engine room?

A. That is normal.

Q. Seven?

A. Yes.

Q. You said something about the engines backing, what was that, as to the revolutions when you got there?

(Testimony of Ernest Bradford Colton.)

A. When I arrived, the first thing I looked at was the engine revolution indicator and it showed 140 revolutions astern.

Q. How long after the collision would you say you got to the engine room?

A. In ten or twelve seconds.

Q. How many men were on board the "Chicago" on the morning of the collision, approximately?

A. 721; that includes the staff.

Q. What do you know of the capacity of a man by the name of Smith on the engine room staff?

A. I assume that was the throttle man. We had several Smiths.

Mr. LILLICK: May it please the court, I think the testimony of this witness as to the efficiency of another officer is hardly a way to prove it.

Miss PHILLIPS: I must confess I do not understand counsel. I think if you will refer to your own depositions, that you asked the captain of the "Silver Palm" the direct question about the efficiency of his staff. I never heard of an admiralty case where the capacity of the ship's personnel is involved, that counsel did not ask whether or not there was an efficient staff. [401]

Mr. LILLICK: I will submit it to the court without argument. The question is what the chief engineer thinks of the efficiency.

Miss PHILLIPS: Oh no, I said what did he know. That was my question.

(Testimony of Ernest Bradford Colton.)

Mr. LILLICK: That is another question, what does he know.

Miss PHILLIPS: May I have the question read?

The COURT: Read the question.

(The last question was repeated by the reporter.)

A. I assume you mean the throttle man.

Q. Yes, I do.

A. He was specially selected for this station on account of his experience on the "Chicago" and on other ships. He has been a throttle man on the "Chicago" for at least a year and is one of our best.

Q. What do you know of the capacity of a throttle man by the name of Wommaek?

A. He is not nearly as able a man as Smith. While we had him in the same engine room he would be under the observation of the officer in charge. I might state that we had to have a total of twelve throttle men, there are three watches, four throttle men on a watch, and we could not get twelve like Smith.

Q. Do you know whether Wommaek is a competent throttle man?

A. Yes, he is competent.

Q. Do you know whether he is reliable?

A. Yes, he is reliable.

Q. What do you know of the capacity of a throttle man by the name of Pugesla?

A. Pugesla was an excellent throttle man.

Q. What do you know of the capacity of a throttle man by the name of Cumbie?

(Testimony of Ernest Bradford Colton.)

A. I would put Cumbie after Pugesla but better than Wommack.

Q. What do you know of his capacity, what do you know of his competency?

A. He has never given the slightest difficulty as a throttle man. Smith I had on the control throttle because I [402] knew he was a better throttle man than the other three. No. 2 throttle is the control throttle.

Q. What do you know of the capacity of Kershaw?

A. He is an experienced engineer and has been on the "Chicago" since it went into commission and knows the plant thoroughly and stands an excellent watch.

Q. What do you know of the capacity of a man named Birchmire?

A. Birchmire is a first class chief petty officer and in charge of the forward engine room, a very able mechanic and stands an excellent watch.

Q. What do you know of the capacity of a man named Davenport?

A. Davenport is a first class petty officer and, until Birchmire came to the ship was in charge of the forward engine room and has been on the ship since it went into commission.

Q. What do you know as to his competency?

A. I had recommended him for promotion, he is an excellent man.

(Testimony of Ernest Bradford Colton.)

Q. Mr. Colton, you have told us something about the capacity of the Chicago's engines. Can you make a comparison between the engine power, the engine installation of the "Chicago" and a battleship, a United States battleship with which you are acquainted?

A. Yes, our latest battleship, the "West Virginia" has a tonnage slightly over 31,000, horse power. 27,300. The "Chicago", 12,000 displacement, horse power 107,000 four times as much horse power.

Q. Is there any first class battleship in the Navy today, as far as you know, which has as much as half of the power of the "Chicago's" engines?

A. None of them have as much as a third.

Q. Can you make any comparison between the "Chicago's" engines and any merchant vessel whose capacity you know?

A. The "Bremen" has about 115,000 horse power, slightly more than the "Chicago" but she is four times as large, 51,000 tons. [403]

Q. Mr. Colton, there are a number of technical questions that counsel wishes to know. I think I have already given you some of them. Do you know what her tons per inch immersion is? That question is unintelligible to me but I think you will understand.

A. If I can qualify the question I believe I can bring out what you want. The tons per inch immersion at the designed water line is 63.3.

(Testimony of Ernest Bradford Colton.)

Q. What is the weight of the "Chicago's" propellers?

A. Approximately 13,000 pounds.

Q. Do you know the size of her rudder?

A. I know the dimensions roughly, they are about 23 feet long—there is only one rudder—and about 15 maximum height. It is not a rectangle. I can see here its height is about 15 feet. Its length is about 23 feet, but that is not accurate, the rudder should be a little more in here.

Q. Let us have that in the record, the measurement parallel with the keel of the ship.

A. It is 23 feet long; its height from here down—

Q. The perpendicular height is what?

A. 15 feet.

Q. What is the length of the "Chicago"?

A. The maximum length is 600 feet, 3-3/8 inches. The length at the water line is 582 feet.

Q. What is her beam?

A. It is 66 feet and 3/8 inches maximum, and 65 feet at the water line.

Q. Might I ask you, do you know what is the height of the well deck from the water line when the ship was at sea on the morning of October 24?

A. Yes, it would be a few inches of 15 feet.

Q. Do you know what the practice of the "Chicago" is as to sounding of whistles during reduced visibility?

A. Yes, they sound them once a minute at sea, that is, intervals of a minute. I know it because it uses up a lot of my steam. [404]

(Testimony of Ernest Bradford Colton.)

Q. I have asked you several questions about the efficiency of the particular men on watch, naming them. What do you know as to the efficiency of the officers and men of the engineering department of the "Chicago" on the morning of October 24, 1933?

A. Well, I do not like to answer that question because I am engineering officer, but the ship stands No. 1 in the engineering competition of the cruiser class.

The COURT: Q. With respect to that personnel?

A. Yes.

Miss PHILLIPS: I understand you are a little modest about that but we will have to have it in the record. Was there an efficiency up to normal on the morning of the collision, so far as you know?

A. Yes, indeed there was.

Q. Mr. Colton, reference was made a day or so ago to something about that a memorandum was kept of the 8 o'clock bell record of the ship, of the engine revolution counter, is that a fact?

A. Yes; I can explain that. The record which I believe has been introduced has only in it revolutions entered at changes of speed. There may not be an entry sometimes for four hours, but for our own records so that you can tell the efficiency of the plant, we read the engine revolution counter once an hour and keep them in a separate log called main engine log.

(Testimony of Ernest Bradford Colton.)

Q. That log has other data, does it?

A. Oh yes, a large amount of it.

Q. Are those the hourly records to which you refer?

A. Yes, the main engine data taken every hour.

Q. Mention was made of this so that I wish to have it in court for counsel to use if he wishes. Mr. Colton, the men at the throttle have given their depositions in this case as to the actions this morning, and their bell records are in evidence. From your knowledge of instructions on your ship as to keeping bell records, and from [405] your knowledge of the working conditions in the engine room on the "Chicago" can you account for any discrepancies that may or may not appear in the bell records?

A. The throttle men have a very busy station. He has a number of duties. His first duty of course is to carry out the orders of the captain, that is, he answers the bell, the signal received from the bridge, sets the engine as the captain wishes, adjusts the circulating pump and the auxiliary steam ready to answer the next signal. In addition to that he is required to enter to the best of his knowledge the reading of the revolution counter; when these signals are received he naturally carries out the captain's orders first and then his bookkeeping later. He enters the reading to the nearest minute. There may be an error of 58 seconds in any reading, as 29 sec-

(Testimony of Ernest Bradford Colton.)

onds before and 29 seconds after, at which he would enter the same minute.

Q. Directing your testimony to the past, not the time of the collision, have you in the past found that the bell book records agrees with each other, or agree upon counter readings, or anything of that sort?

Mr. LILLICK: I object to the question upon the ground that we are not concerned with what happened on other occasions. We are only concerned with this occasion. If we were, I might have just as much right to have offered testimony as to what happened on the "Chicago" on other occasions, as to her proceeding at a moderate rate of speed in the fog.

Miss PHILLIPS: I withdraw the question.

Q. Mr. Colton, do you yourself rely on bell record readings?

A. Not unless I actually observe the recording of the data.

Q. Why is that?

A. It is impossible for one throttle man to carry out all his duties and get a perfect laboratory record of engine room counters. [406]

Q. What are the qualifications for a throttle man which you select to place a man at the throttle?

A. A steady man, not get excited in an emergency, and able to handle the throttle quickly, and to be counted on not to give ahead when asked for

(Testimony of Ernest Bradford Colton.)

astern, or vice versa; in other words I want a good mechanic there that understands the engine and can handle the throttle quickly.

Q. Do you have in mind any qualifications as to their ability to keep books?

A. No, I am not interested in that.

Q. Mr. Colton, how long has the "Chicago" held No. 1 position in her class?

A. Ever since she has been in competition.

Q. How long is that?

A. You do not go in competition when you first go in.

Q. When did you first go in competition?

A. On July 1, a year ago last July.

Miss PHILLIPS: That is all.

#### Cross Examination

Mr. LILLICK: Q. Mr. Colton, is there any other original record kept on the "Chicago" with respect to the bell orders than that kept in the engineer's bell book.

A. Not of the bell orders, no, except on the bridge.

Q. I am only asking of the engine room, as to your own records; the engineer's bell book is taken as authentic is it not, not only on the "Chicago" but on the report that you have to turn in to the department?

A. Yes, that is the best record we have.

Q. It is one of the vital records kept on the "Chicago"?

A. Yes.

(Testimony of Ernest Bradford Colton.)

Q. Calling your attention to one of the engineer's bell books, it being for No. 4 engine, I point to the instructions on each page. Are these instructions issued by the department?

A. Yes.

Q. That is by the Navy Department?

A. That is a printed form [407] from the Navy Department.

Q. One of these instructions in Column 4 is, "Enter the counter readings at the time the change is made." That is a definite instruction from the Navy Department carried out by you in passing on the instructions that you give to these men at the throttle?

A. Yes, but the primary instruction is to answer all signals from the bridge.

Q. But this is an original record and for use not only by you as chief engineer but by the Navy Department as well?

A. Yes.

Q. And this definite instruction is that the counter reading shall be entered at the time the change is made?

A. Yes.

Q. There is no doubt about that?

A. There is no doubt about that.

Q. One other instruction I will call your attention to and ask you whether or not, printed in heavy type, "Alterations or erasures are not permitted, necessary corrections shall be made by a

(Testimony of Ernest Bradford Colton.)

note written across the blank lines of the record. That is another instruction from the Navy Department?

A. That is part of the large number of instructions on this sheet.

Q. When men in your engine room do not carry out your own instructions are they not disciplined?

A. Yes, if I give them instructions that I know they can carry out and they do not carry them out, they are disciplined.

Q. Had your attention been called to the fact that this particular engine room record had been erased before?

A. No, it had not been called to my attention.

Q. Until now, Mr. Colton, you did not know that engine No. 4 had on the record that was kept by it, an erasure?

A. I had not studied these records; they were taken from me immediately after the collision and turned over to the captain.

Q. In any event there is no doubt about the erasure on that one? [408]

A. It looks like an erasure to me.

Q. Isn't it an erasure, Mr. Colton?

A. I could not swear to it, it looks like an erasure to me.

Q. Then Mr. Colton, may I ask you to look at it a little closer, and I will ask you whether you are not willing to swear as a fact that that evidences an erasure.

(Testimony of Ernest Bradford Colton.)

A. I would not swear to it unless I saw it done.

Q. Let me ask you for your best opinion with respect to that.

Miss PHILLIPS: Just a minute.

Mr. LILLICK: Let me finish my question.

Q. Isn't it your opinion now, looking at this, that there is an erasure on that line?

Miss PHILLIPS: I object to that on the ground that question has been asked and answered.

Mr. LILLICK: I have a right, following the witness' reluctance, apparently, to swear to a thing, his opinion as to it.

Miss PHILLIPS: He has already given his opinion twice.

Mr. LILLICK: I submit to the court I have a right to ask again if I wish, the question for a third time.

Miss PHILLIPS: Then I will withdraw the objection, as he has answered the question twice.

A. Which question do you want answered?

Mr. LILLICK: Q. I want to know whether, and I think this is the first time I have asked the question, is it not your opinion on looking at that, Mr. Colton, that that line has an erasure upon it, and another signal entered?

A. I don't know whether another signal is entered. It certainly looks like there was an erasure made.

Q. You have no doubt of it, have you?

Miss PHILLIPS: That question has been asked and answered.

(Testimony of Ernest Bradford Colton.)

Mr. LILLICK: It has not.

Miss PHILLIPS: The substance of it has been asked and answered. [409]

The COURT: I will allow the question to be answered.

A. In my opinion an erasure has been made there.

Mr. LILLICK: Q. And the erasure to which we are both referring is an erasure appearing upon engine bell book No. 4 on the entry for 8:05 October 24?

A. That is right.

Q. I call your attention for engineer's bell book for No. 3 engine, "Silver Palm" Ltd. Exhibit 1 Wommack, and ask you whether upon the line where the entry is made for 8:07 that morning there is not an erasure.

A. In my opinion there has been a change made there.

The COURT: Is that a change or an erasure?

A. It is hard to tell whether it is written over or erased.

Mr. LILLICK: Q. I think with this glass you will be able to tell.

A. I can see the original figure was 8 and now there has been a 7 written over it.

Q. I call your attention on the same bell record sheet, to the entry 8:03, two-thirds speed in the column indicating the revolutions per minute, and

(Testimony of Ernest Bradford Colton.)

ask you whether an erasure has not been made where 115 appears and 115 written over it?

A. It looks like it.

Q. Can you tell what was under the 115?

A. No, I can not.

Q. On that same line, Mr. Colton, can you tell me whether there has not been an erasure under the figures "945,300", and the "300" written over something?

A. It appears that way to me, yes.

Q. This too was in direct violation of the instructions on that sheet?

A. I don't know when that erasure was made.

Q. These bell books, Mr. Colton, have been produced by the Government during the trial, and Miss Phillips will agree with me, if I am not mistaken, as it is my understanding, that they were taken from the custodian within 24 hours after the collision and thereafter kept, under what, shall I say, lock?

Miss PHILLIPS: I would not say. I know they were kept for [410] the court of inquiry. How soon they were taken from Mr. Colton, who had them, I am not able to say.

A. They were taken from me that morning and I had no chance to go over them.

Mr. LILLICK: Q. In other words, if these changes to which you and I have referred, were made afterwards, you don't know who made them.

A. No, I would not know who made them.

Q. As I understand your testimony it is only

(Testimony of Ernest Bradford Colton.)

that when you did see these sheets you don't remember whether these erasures were made upon them or not?

A. I had no chance to examine the sheets.

Q. So that to put it exactly, you had not examined the sheets at all since they were turned over to you as chief engineer by the officer in charge of the engine room in which these men operated?

A. That is correct.

Q. I hand you engineer's bell book for No. 2 engine, Mr. Smith's engine, and ask you to look at the entry under counter opposite 8:07 and will you tell me whether, in your opinion, the figure "6" has not been written over another figure in "7690"?

A. I must confess I can not tell whether it is the figure 6 or figure 5.

Q. The 8:10 to which I have directed your attention, has that not been changed from either 800 or 810?

A. Yes, that is either 800 or 810. I think that must be 810.

Q. With respect to the time entered on these sheets it is my understanding of your testimony that the outside error would be 58 seconds?

A. If all the clocks were exactly together, yes.

Q. Were the clocks exactly together in the engine room that morning?

A. They were not.

Q. What distance was there between them?

(Testimony of Ernest Bradford Colton.)

A. I don't recall the exact figures except that the maximum swing was 37 seconds. [411]

Q. So that, except for a difference of 37 seconds and the possibility of error of 58 seconds,—you say 29 seconds either side of the minute hand—that would be the outside limit of approximate error in these sheets?

A. In the time?

Q. In the time?

A. Yes.

Q. It has been suggested, Mr. Colton, that with respect to the efficiency of the engine room crew, in rating your men did you rate them at all with respect to the action of the men with respect to these sheets?

A. No, I did not want bookkeepers; I wanted operating engineers.

Q. So that your only reaction from these bell records is that the only errors in them are errors or erasures and correction as to time?

A. May I hear the question again?

The COURT: Read the question.

(The question was repeated by the reporter.)

A. I do not understand what you are driving at, I must confess. Can you elaborate a little on that question?

Mr. LILLICK: May I have the question read again?

The COURT: Read the question.

(The question was read by the reporter.)

(Testimony of Ernest Bradford Colton.)

A. That is not my only reaction to the bell records.

Mr. LILLICK: Q. It was my understanding that you distinguished between the entries from the standpoint of their being bookkeeping entries and having nothing to do with the efficiency of the men. That is what you intended to mean, was it not?

A. The counter readings mean nothing, practically, because they could not possibly get those down at the same instant, they are doing these other operations; they would be lucky to get even correct within a minute.

Q. So that this record kept by the Naval department, certainly for some purposes, in having it entered in the very definite [412] manner in which it is entered here, you would say that that record is useless as to—

A. Counter readings.

Q. Counter readings?

A. Yes, it is a physical impossibility to do more than two or three things at one time.

Q. How do you understand that the men in making entries with respect to the counter readings do? Will you give me from observation in the engine room what a throttle man does when he gets a signal from the bridge of two-thirds ahead?

A. He shifts first, the handle of the engine room telegraph of two-thirds ahead, to show that he understands the signal from the bridge. Then he sets his throttle, giving the revolutions for two-

(Testimony of Ernest Bradford Colton.)

thirds ahead, and then he sets his circulating pump and his auxiliary exhaust system to maintain the two-thirds and then enters the record in his bell book.

Q. You would say that the entry with respect to the revolutions means nothing?

A. If signals are coming very rapidly they would be practically worthless.

Q. You are qualifying that by "if signals come very rapidly"; but signals of three minutes apart, the physical activity of the man is not entirely occupied during that three minutes?

A. Not for the full three minutes, no.

Q. Then would not a record of just the type we are discussing here give the men in that three minutes, sufficient time to enter the time?

A. He would enter the time in the bell correctly. The counter reading probably would not be correct.

Q. So that the counter readings on these sheets in your opinion are not correct?

A. I would say they were of no value to me at all, and probably not correct.

Q. Probably not what?

A. Probably not correct.

Q. Then what does observation in the engine room mean with respect to revolutions, as to how many revolutions a minute are being shown up on the revolution counter? [413]

A. We have a revolution indicator, a revolution counter, the revolution indicator shows the actual

(Testimony of Ernest Bradford Colton.)

speed at that instant that the engines are going, and to get the speed from the revolution counter you would have to take two readings, take the time between the two readings and calculate the speed.

Q. Mr. Colton, is it my understanding of the testimony of the throttle men, that when they have an order of standard speed of twelve knots an hour, they enter in the bell book 115 revolutions. Would you say that was not customary upon the "Chicago"?

A. It is customary.

Q. It is customary?

A. If the standard speed is 12 knots, they would put down the number of revolutions for twelve knots in that column.

Q. Can you on this sheet give me any revolutions per minute entered by the throttle man other than the 115 revolutions per minute at two-thirds speed at 8:02, the 173 revolutions per minute as standard entered at 8:03, between 8:01 and 8:19?

A. 8:01 we have a stop bell, so naturally there are no revolutions per minute. At 8:05 he has got full speed astern. 8:05 again full speed astern again, showing the emergency signal which would mean to make all possible speed astern. 8:07 is a stop signal which again would show no revolutions.

Q. Perhaps I am not making myself clear. It is my understanding that the throttle men, instead of looking at the revolutions per minute on the counter at a certain speed, put down 115 without

(Testimony of Ernest Bradford Colton.)

looking at the counter, when they have a 12-knot an hour standard speed. That is right is it not?

A. That is correct, they put down what the standard speed is.

Q. When they are running at standard speed of 18 knots an hour and an order of two-thirds comes, which is 12 knots an hour, they put down simply 115? [414]

A. Which shows that is two-thirds of standard speed.

Q. So that I might, with respect to the throttle men, not putting down on this record any revolutions per minute, that his tachometer shows, but only puts down what the signal means with respect to 115 revolutions at a standard speed of 12?

A. Yes, you are right on that.

Q. Now the only other record of the revolutions per minute that any particular engine is making is taken, as I understand it, under instructions, by the throttle man from the revolution counter, and that is one of his duties, is it not?

A. That is rather a long question and I would like to hear that read again.

The COURT: Read the question.

(The question was read by the reporter.)

A. It is one of his duties.

Q. And in each instance with respect to each engineer's bell book for the engineers operating No. 1 engine, No. 2 engine, No. 3 engine, No. 4 engine, for every separate order that came down from the

(Testimony of Ernest Bradford Colton.)

bridge at the different times mentioned, No. 4 for example 8:01, 8:02, 8:03, 8:05, 8:07, these throttle men each enter the number of revolutions shown by the counter upon his particular engine?

A. He enters these counter readings to the best of his knowledge as soon as he can after he has executed the signal from the bridge.

Q. As I understand your testimony you would say that the figures entered by each of these throttle men on each of these four engines for the time between 8:01 and 8:07 can not be deemed to be correct?

A. The times, or the counter readings?

Q. The counter readings?

A. I would say the counter readings would be regarded with grave suspicion, I would not think them correct. [415]

Q. I would like you to define "grave suspicion".

A. For the very reason that I have explained to you, that they put the counter readings down, that they got the correct reading down.

Q. Then you would say a counter reading entered at 8:01 and another counter reading at 8:05 could not be used to learn from that sheet how many revolutions the engine made in that time?

A. If the counter readings are put down exactly at 8:01 and again exactly at 8:05, the exact counter reading, you would get the average speed for that time, but they would have to be put down

(Testimony of Ernest Bradford Colton.)  
at the exact time.

Q. On engine No. 1 the throttle man has entered at 8:06 1240 revolutions——

A. Opposite 8:06.

Q. Opposite 8:06, and that throttle man opposite 8 o'clock has entered 575, is that not right?

A. That is what he indicated.

Q. So that I get 1055 at 8 o'clock from 1240 at 8:06, I will have the number of revolutions the engine made during that time, with what you would say might be an allowance?

A. No, both those times would be considerably off. I might add, when the Navy Department wants accurate data, they send trained observers to the ship, who have nothing to do but read the counters. For instance, on our official trial they sent 20 extra trained observers so that each man would only have one thing to do.

Q. Because the efficiency of your throttle men is defective?

A. No, because they want accurate data on the counter readings.

Q. I am sorry, Mr. Colton, but in the question I asked you before I inadvertently gave the wrong figure. I will have to ask you to bear with me. On Engine No. 1 at 8 o'clock the revolution counter shows 575, and at 8:06 the counter reading shows 1240; [416] the difference between 575 and 1240 is 665. How far would you say I have a right, with your

(Testimony of Ernest Bradford Colton.)

knowledge of what is done in that engine room, to vary. How nearly accurate is it?

A. Let me see the readings in between. I would say if you swung it two minutes one way or the other you would be fairly close.

Q. So that the record of engine No. 1 from 8 o'clock to 8:06 with respect to revolutions, is necessarily correctible to the extent of two minutes?

A. Not necessarily correctible.

Mr. LILLICK: May I have the last question and answer read to me, and will you listen to it?

The COURT: Read the last question and answer.

(Record read by the reporter.)

Mr. LILLICK: Q. Do you mean that the engine counter reading 575, taken at 8 o'clock is incorrect, possibly?

A. Oh yes. I have seen these records out as much as a thousand revolutions: one digit wrong makes a thousand revolutions.

Q. Have you seen them out as much as 1000 revolutions when, during a period of six minutes, the revolution counter is read five times?

A. One of these could easily be out 1000.

Q. At 8 o'clock the revolution counter showed 575, at 8:01 the revolution counter shows 790; at 8:02 the revolution counter shows 790; at 8:03 the revolution counter shows 900, at 8:06 the revolution counter shows 1240. Which of those may easily be out 1000 revolutions?

A. Any one.

(Testimony of Ernest Bradford Colton.)

Q. Mr. Colton, you surely do not mean that the counter at 8:02 of 790 revolutions might be out 1000 revolutions?

A. If I did not see these counter readings taken personally, I would have very little faith in them.

Q. Then it is your testimony that on these particular records, from 8 o'clock to 8:06, any one of these may be out 1000 [417] revolutions?

A. If you assume that four or five are correct, or if you assume that any one of them is correct, of course not. I assume that probably none was correct.

Q. If you were told that the man that made these entries testified that these entries were true and correct would you change your testimony?

A. If he said, if he was sure under oath that he entered counter readings at the time he stated, I would say they were correct.

Q. If the man who made the entries on No. 1 engineer's bell book has testified under oath that the entries indicated thereon from 8:01 to 8:07 were accurate and correct would you say they are correct?

A. If he stated that he made each of those entries at exactly the time shown on that sheet I would say they were correct.

Q. Would your answer be the same as to engine No. 2, if he testified that the entries he made from 8 o'clock to 8:07 were accurate and correct?

(Testimony of Ernest Bradford Colton.)

A. If he would swear that he made them at the exact time stated, I would say they were probably correct.

Q. In other words, in any event, these are the best records that the "Chicago" has of the actual revolutions per minute, and revolution countings made on the respective engines during the times?

Miss PHILLIPS: Just one minute; I believe that question is compound. I think counsel should distinguish there visual records and written records; and I think he should distinguish between those points in his question.

Mr. LILLICK: I will reframe the question.

Q. We have before us the four engine room bell book record for engines 1, 2, 3 and 4 on the "Chicago" containing the record for that morning of the number of revolutions, by the respective engines from 8 o'clock until 8:06. Those records are the only written records of those [418] revolutions that the "Chicago" has?

A. No, we have reading at 8 o'clock on all four counters on a separate record.

Q. The sheets which I have just shown you and identified as engineer's bell book for engines 1, 2, 3, and 4 are the only written records upon the cruiser "Chicago" for the number of revolutions per minute of the engines of the "Chicago" on those respective propellers from 8 o'clock that morning to 8:06, are they not? You might say yes or no and then put in any explanation you like.

(Testimony of Ernest Bradford Colton.)

A. I would like to qualify my answer. We take readings every hour on all the air counters regardless of whether a change of speed has been made or not. We take the readings on the bell record sheets only at the time the changes are made. The smooth log also shows the average revolutions per minute being made at the beginning of the watch, so we have the actual revolutions the ship is making at that point.

Q. I will have to ask you the question again. Will you follow this question. I have shown you the bell record sheets for engines 1, 2, 3 and 4 on the "Chicago" on the morning of October 24 for the period between 8 o'clock and 8:06, opposite which in minute intervals or more there are figures given as the figures representing the number of revolutions made at those respective times on those respective engines, and I ask you if those are not the only records existing upon the "Chicago" representing those revolutions?

A. The question is not clear. Those revolution counters do not show speed. They only show an instant reading of the revolution counter.

Q. But that is what they show, that is what the records show?

A. It shows the reading of the revolution counter.

Q. By the throttle men at that engine?

A. Yes. [419]

(Testimony of Ernest Bradford Colton.)

Q. And those are the only written records that there are on the "Chicago"?

A. For that period.

Q. For that period?

A. That is correct.

Q. And they are the written records that are kept as original records upon the cruiser for that, aren't they?

A. Yes.

Q. Can you tell me whether or not these sheets are sent on to the Navy Department at Washington from time to time?

A. They are not unless called for; we keep them as original records on the ship.

Q. They are kept as one of the original records on the ship?

A. Yes we have done that ever since she has been in commission.

Q. Do you personally know, Mr. Colton, whether the throttle man enters the time when the order is received or whether he enters it when he carries out the order, or whether he enters it as a part of his bookkeeping that he does afterwards?

A. The ideal condition would be to enter it instantly that he receives it. He enters it as of the time he thinks it was received.

Q. And that is done on each of these in the engine room on that occasion?

A. Yes.

(Testimony of Ernest Bradford Colton.)

Q. You testified that on the official trial the reversing speed on the "Chicago" was in the proportion of 33.6 knots?

A. 32.5 knots.

Q. 32.5 to 20?

A. To 20 knots astern.

Q. Is that same proportion carried through on a speed of less than 32.5 to 20, say taking 18 standard?

A. No, we could make a little better proportion at 18 standard instead of 32. to 20.

Q. In other words you could do better at 15 knots than 32?

A. Yes, because the stern is not as clean cut as the bow, and it is harder to go 20 knots astern than 20 knots ahead. [420]

Q. You testified that you would have to make more revolutions to get an indicated speed ahead when your vessel is somewhat foul, as the "Chicago" was?

A. That is correct.

Q. How would that alter the 173 revolutions a minute for an 18-knot speed? Is there any difference at all?

A. With a clean bottom, 168 turns would give 18 knots ahead.

Q. So that for the purpose of this case, 173 revolutions per minute meant 18 knots speed?

A. Yes.

(Testimony of Ernest Bradford Colton.)

Q. And 115 revolutions per minute meant 12 knots speed?

A. Ahead, yes.

Q. When you gave us the example of picking up the planes at sea, the men in the engine room knew that these were maneuvers being made, did they not, and the planes picked up?

A. Not necessarily, no.

Q. You say not necessarily; do the men in the engine room know when you are maneuvering because of the steam required?

A. I would like to hear that last part.

The COURT: Read the question.

(Question read by the reporter.)

A. No, they do not have to know.

Mr. LILLICK: I am not asking whether they have to know. I am asking, Mr. Colton, from your experience as chief engineer of the cruiser "Chicago" whether, when you go out to make either a test for speed or a maneuver, cruiser formation, I don't know what you would call it, the men in the engine room do not generally know you are out for some special purpose?

A. Sometimes they would know, and sometimes they would not. The officer of the watch would know.

Q. By the officer of the watch you mean insofar as the engine room is concerned, what particular officer?

(Testimony of Ernest Bradford Colton.)

A. The officer who is in charge of the engine room plant for that particular four [421] hours.

Q. Is that a man who would be in a position similar to that occupied by Kershaw on the morning of October 24?

A. Kershaw was officer of the watch on that morning.

Q. In your opinion, Mr. Colton, when you were out and picking up aeroplanes, don't the men in the engine room know, so that they are all on their toes and the operation of the throttle is efficient, from the standpoint of the men on the ship?

A. No. I do not always know when they are going to pick up aeroplanes.

Q. So that you would say the two minutes that you spoke of in connection with that test is an estimate comparable to any other time when similar orders may be sent to the engine room?

Miss PHILLIPS: Counsel has used the word "test". I think the witness has said that was not a test, it was ordinary maneuver of picking up aeroplanes.

Mr. LILLICK: With that question, Mr. Colton, we will call it a maneuver.

A. That was just normal operation conditions for the engine room.

Q. So that we may use that as a guide for what occurred on October 24, up to the time the emergency full speed astern bell came?

(Testimony of Ernest Bradford Colton.)

A. Yes, except that in picking up planes we do not get emergency signals, we get an ordinary full speed astern signal.

Q. Can you tell me what the ordinary cruising speed of the "Chicago" is at sea?—

A. In formation or alone do you mean?

Q. I will let you specify?

A. In formation we cruise at the speed as designated by the admiral in charge of the formation.

Q. Which is customarily what?

A. Twelve, 15, 18 knots.

Q. And what speed do you use independently, customarily?

A. We like to use 12 or 15 knots, an economical speed.

Q. As a matter of fact, have not orders been received from the Navy [422] Department to proceed at a speed not to exceed 15 knots?

A. I have not seen any orders to that effect.

Q. Have you heard of them?

A. My answer is no to that.

Q. What did you base your testimony on a few moments ago with respect to 12 or 15 knots being the speed you were to run for economical purposes?

A. We can make a better engineering score at lower speed.

Q. As I understand you, that is not because of any orders from the Navy Department?

A. No orders from the Navy Department.

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United States  
Circuit Court of Appeals

For the Ninth Circuit.

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SILVER LINE, LIMITED, Owner and operator of the British Motorship "SILVERPALM", and the British Motorship "SILVERPALM", her engines, tackle, apparel, furniture, etc.,

Appellants.

vs.

UNITED STATES OF AMERICA, Owner and operator of the Cruiser "CHICAGO", UNITED STATES OF AMERICA, ETHEL G. MAC FARLANE, as Administratrix, MARIAN B. CHAPPELLE, as Administratrix, JOSEPH A. OEHLERS, LOUIS GIARD, and BANK OF AMERICA NATIONAL TRUST & SAVINGS ASSOCIATION, as Special Administrator,

Appellees.

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**Apostles on Appeal**

In Three Volumes

**VOLUME II**

Pages 577 to 1152

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Upon Appeal from the District Court of the United States for the Northern District of California,  
Southern Division.

FILED  
JUN 15 1936

PAUL P. O'BRIEN,  
CLERK



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(Testimony of Ernest Bradford Colton.)

The COURT: Q. So far as you know?

A. I say that my estimate has nothing to do with any orders from the Navy Department.

The COURT: At this time we will take a recess until two o'clock.

(A recess was here taken until 2 o'clock p. m.)  
[423]

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Afternoon Session

ERNEST BRADFORD COLTON

recalled

Cross Examination Resumed

Mr. LILLICK: Q. Mr. Colton, can you tell me what the size of the turbines are on each engine, that is, by diameter, how high they stand?

A. I can give you a picture of that.

Q. I much prefer that.

A. This may help you. I have a pack of the plans also that may give more detail.

Q. I do not care for the details, I only wish the size.

A. This is to actual scale. High pressure turbine, 12 feet long approximately.

Q. How high?

A. Seven feet in diameter roughly, as near as I can estimate.

Q. That would be seven feet from the periphery at the wheel to the opposite side?

A. Approximately.

(Testimony of Ernest Bradford Colton.)

Q. That was the high pressure turbine was it not?

A. Yes.

Q. What was the size of the low pressure turbine?

A. The length is the same, the diameter is about 12 feet.

Q. The two turbines are so arranged that they must be used separately, or are they both used together?

A. When you open the throttle for the ahead you turn the steam on the high pressure and low pressure simultaneously on that particular engine.

Q. When you start to reverse?

A. You close off the steam to the high pressure and low pressure and insert steam in a new turbine, which is the astern turbine.

Q. May I take the example that you have just given me as an example of the turbines that were attached to each separate propeller?

A. Yes.

Q. What is the weight of the entire revolving mechanism that revolves when the steam is turned into both high and low pressure for forward motion?

A. I could not say. [424]

Q. Your best estimate of what it is.

A. I would not even be able to estimate. That can be gotten from the Navy Yard at Mare Island very quickly.

(Testimony of Ernest Bradford Colton.)

Q. You have seen the turbines of course many times, haven't you?

A. Yes.

Q. And as you have seen them can you not give me an estimate of the weight of the material going into the turning elements of the turbine?

A. I could not, I am an operating engineer and not a design engineer.

Q. So that only a designing engineer would know that?

A. Yes.

Q. Would you say that the rotating gear would be as heavy as 15 tons?

A. I would not make any estimate on the weight.

Q. Surely you could estimate whether it is one ton or twenty tons?

A. I would not care to make an estimate. I wouldn't put a figure down that I have not any idea as to whether it is right or not. I could get you the information if you wish.

Q. I would like to have it. Perhaps Miss Phillips will give it to me from what you inform her the weight of one of these is.

A. Propellers?

Q. Propellers, counting the weight of everything from the end of the propeller shaft, the entire steel and metal revolving mechanism involved in the propeller, from the turbine to the propeller, in the forward motion.

A. Very well.

(Testimony of Ernest Bradford Colton.)

Q. Will you tell me what the maximum revolutions are of the propellers going full speed astern at 20 knots on the "Chicago"?

A. It is roughly 240 revolutions, probably 250. I would rather say 250.

Q. Would that same number of revolutions apply when going full astern from an 18-knot standard speed?

A. Full speed astern is 110 revolutions. [425]

Q. You say to give it emergency full speed astern from 18 knots ahead?

A. We could not get over 190 revolutions astern.

Q. Mr. Colton, you said this morning that the revolution counter record showing the number of revolutions the various propellers were making at the even hour was recorded on the "Chicago"?

A. Yes.

Q. Does the recording of that fall within a duty of one of the men on watch at the even hour?

A. Yes.

Q. Who does that?

A. If the throttle man is not answering the signal he would normally do it.

Q. On the morning of the collision Kershaw was, as I understand it, the officer in the after engine room? Was he the man who would have made that record?

A. No, there are four men that had to take that record, there are four different counters.

(Testimony of Ernest Bradford Colton.)

Q. So that the four different throttle men would make that entry?

A. If they were not answering a signal at the time.

Q. How is that taken down? Does Kershaw go from one to the other and then record it on his sheet from what they tell him?

A. No, they record it on a sheet themselves.

Q. On the ordinary bell book sheet, or on some other?

A. No, on that main engine data sheet which you have there, or that is in the court room. That is the sheet.

Q. You are referring to the sheet that I hold in my hand?

A. Yes. Here are the readings.

Q. In calling your attention to these readings on these various sheets, am I right in believing that they are on No. 4 engine in the same handwriting?

A. No.

Q. Then will you tell me where one handwriting ends and the other commences?

A. I cannot tell you that. I can only tell you the throttle men make these counter readings, and this sheet is taken around the engine room and the other men in the watch fill in these entries. [426]

Q. But as to each entry on the even hour the throttle man himself makes the entry?

A. He would normally make the entry if he was not busy with something else.

(Testimony of Ernest Bradford Colton.)

Q. You don't know whether on this morning, Smith at one throttle, Cumbie at another, Wommack at another and another man at the fourth, made them?

A. No, I was not in the engine room.

Q. When you came down to the engine room a few minutes after the collision you went directly to the aft engine room?

A. Yes, that is the control engine room.

Q. Was there a man by the name of Haynes there, do you know? Do you remember him?

A. I do not recall. I believe he was, I am not sure.

Q. You know that because you have been told since the collision Mr. Haynes was in the after engine room?

A. I immediately made a list of the men that were actually on watch at the time of the collision. I can refer to that and tell you whether he was there.

Q. Will you please?

A. His name does not appear on my list.

Q. As I understand the list to which you refer, and which you are holding in your hand, was made by you at that time?

A. It was made under my direction.

Q. And approximately at what time that morning?

A. About 8:45 roughly.

Q. So that the sheet made up at 8:45 by someone else does not indicate whether Haynes was there between 8 and 8:06?

(Testimony of Ernest Bradford Colton.)

A. It does not show him as having been on watch at that time.

Q. Where did you get the information that Haynes was in the engine room at the time of the collision?

A. I did not say that Haynes was in the engine room at the time of the collision.

Q. I misunderstood you. Do you know whether he was in the engine room?

A. I don't know.

Q. If he was there with the engine room crew that you then had, he [427] had no business there, had he?

A. I would not say that.

Q. When did Haynes leave the "Chicago" do you know?

A. I don't know.

Q. Do you know why he left the "Chicago"?

A. I don't know. We have 186 men, roughly, in my department, and I do not keep track of their going and coming.

Q. Who would know about the record of Haynes?

A. The executive officer on the ship.

Q. And the executive officer is whom?

A. Commander Brereton.

Miss PHILLIPS: I would be very glad to produce any records about Mr. Haynes that Mr. Lillick wants. Several witnesses have testified about the time he left and whether his term of enlistment expired. If you want the exact date on which he left I

will be very glad to get it, but I think there is a good deal of time being wasted asking witnesses who do not know the details apparently that Mr. Lillick wants.

Mr. LILLICK: I have in mind that one of the three men who was in the engine room—and I may be in error about this—left the ship because his term of enlistment expired and the other man on the port lookout testified one of them left because his term of enlistment expired, and another man who was on the port lookout or starboard lookout, one of those men, I understand left the ship not because his term of enlistment expired.

Miss PHILLIPS: The man on the starboard lookout, the port lookout testified, was discharged. Several witnesses have testified that Haynes left because his term of enlistment expired. If you want any more detail I will get it.

Mr. LILLICK: I do not care for any more.

Q. Mr. Colton, I would like you to, if you will, follow this question closely. I want you to assume from the time the full astern order was given until the time of the collision, the "Chicago" ranged ahead 272 [428] yards; what speed would you say she was going at at the time that full astern order was given?

A. Might I ask you if you are assuming that the "Chicago" had become dead in the water when she stopped?

Q. No, that is a very proper question. Let us assume that at the time of the collision the "Chi-

(Testimony of Ernest Bradford Colton.)

ago" was making approximately four knots an hour, and that from the time the full astern order was given until the time of the collision she had ranged ahead approximately 272 yards. What speed would you say she was going at the time the full astern order was given?

A. What is the time interval there, I will have to have that.

Q. The time interval as you remember it, from when you heard the full astern order, and the collision.

Miss PHILLIPS: I beg your pardon, the witness did not testify he heard the full astern order.

Mr. LILLICK: Q. Did you not hear the full astern order?

A. No, I did not say that I heard the full astern order.

The COURT: You said you heard the siren?

A. I heard the siren and then the word "Collision".

Mr. LILLICK: Q. Let us assume that the full astern signal was given at one minute before the time of the collision.

A. I would figure the ship was making, on those assumptions, 15 knots through the water, if she was making four knots when she was struck, and made only 273 yards in one minute.

Q. This morning you gave us some estimate as to the time within which the ship could be brought

(Testimony of Ernest Bradford Colton.)

to a stop at certain speed. If you assumed that the "Chicago" was going through the water at 15 knots an hour, and a full reverse signal was run in the engine room, figuring that time from the time the signal was received in the engine room, how long would it take to bring the "Chicago" to a stop in her condition that day? [429]

A. This was a full astern, not an emergency astern?

Q. Emergency full astern.

A. My estimate of it would be one and a half minutes.

Q. You have never tried that and timed it have you, on the "Chicago"?

A. Not emergency full speed. We have only tried it for full speed astern, two minutes.

Q. Is the "Chicago's" engine room equipment so attached that both the high and low pressure can be put upon all of the propellers for a full astern signal?

A. That question is not clear to me. I *can* get what you mean.

Q. Let me reframe it in order that you may understand what I mean. I want to know whether, to put the four propellers on the "Chicago" in full reverse, you attach both the high and low pressure turbines?

A. We do not. To put the "Chicago" in reverse we use only the astern turbine, which is a single turbine separate from the ahead turbine.

(Testimony of Ernest Bradford Colton.)

Q. What, with relation to the high pressure and low pressure, do you use? I am not an engineer, as you can well see by my questions, and I want to find out.

A. The full ahead pressure of steam of approximately 300 pounds goes directly into the astern turbine.

Q. Is it connected with only the low pressure turbine or both the low pressure and high pressure?

A. There is no high pressure or low pressure astern turbine. It is a single turbine and takes the full volume of steam. It is different from going ahead. In going ahead we have both high and low pressure turbines.

Q. In other words, there is a disconnecting equipment, is there? It runs on the same shaft?

A. The same shaft turns right through the reduction gear.

Q. I am not sure that you were asked what the lag in the speed of [430] the engines means. Can you tell me what it does mean?

A. You mean the lag of the speed of the engines behind the speed of the ship? Is that what you are referring to?

Q. Yes.

A. The propellers have to be going faster than the ship in order to increase the speed of the ship. The speed of the ship through the water when the ship is going ahead, when increasing the speed, the speed of the ship through the water would lag behind the speed of the propeller.

(Testimony of Ernest Bradford Colton.)

Q. And then the propeller, in the reverse motion would correspondingly, before it brought the ship to a stop, and after she commenced to back, would still lag behind, in the same fashion as going ahead?

A. The propellers would be going in the opposite direction and have the opposite effect.

Mr. LILLICK: That is all.

#### Redirect Examination

Miss PHILLIPS: I have just a few questions, Mr. Colton, does the time out of the dry dock make any difference in the time required to stop the ship in the water?

A. A ship going ahead and given a stop bell will stop quicker if the bottom is foul than it would if the ship had just come out of the dock.

Q. How many hours had the "Chicago" boilers No. 5 and 6 steamed since the cleaning?

A. Since the last cleaning?

Q. Yes.

A. Prior to the collision up to getting under way the day before, it was 44 hours, and then adding 23 hours to the time of the collision it would make 67 hours.

Q. How long can you run boilers before they have to be cleaned?

A. The engineering instructions call for 700 hours maximum.

Q. Are the written instructions by the department of engineering of the Navy as to the entries in the bell book, mandatory, or directive? [431]

(Testimony of Ernest Bradford Colton.)

Mr. LILLICK: Just a second, I object to that as purely a conclusion of the witness, your Honor.

Miss PHILLIPS: May I be heard on that?

The COURT: Yes.

Miss PHILLIPS: The rule of this court has always been, I mean in this court here, that the interpretation of instructions by a department of the Government having the enforcing of those instructions is admissible in evidence. That question, if your Honor please, was raised in the Behring Sea sealing cases, which were tried before your Honor. The question as to what interpretation was placed in the instructions by the Department was held admissible in evidence in those cases. I can get your Honor's ruling on it, but I am quite positive that that rule has been followed repeatedly. In addition, the Departmental construction of regulations is admissible in evidence, which your Honor has had raised in the tax cases.

Mr. LILLICK: May I have a word? My objection runs to the question asked this witness of whether it was mandatory or directive. If this witness should say it is mandatory, it would be based on instructions received by him, and he is not shown to be in a situation to say whether his instructions were mandatory or directive.

Miss PHILLIPS: I do not believe counsel has understood the question.

The COURT: I believe he can express his opinion on that.

(Testimony of Ernest Bradford Colton.)

Miss PHILLIPS: I will reframe the question.

Q. In construing the written instructions of the Department of Engineering as to entries in the bell books, what construction have you placed upon those written instructions, as to whether they are mandatory or directive?

A. I would answer, directive.

Q. Directive?

A. Yes.

Q. Are those instructions signed by anyone?

[432]

A. They are not, they are in written form.

Q. You have stated that if a member of your staff disobeyed an order which he should have obeyed, you subject him to discipline. I believe you stated that this morning. Do you regard errors in bell book entries as disregarding of orders?

A. I do not.

Q. Have you ever subjected a man of your staff to discipline for errors in bell book entry?

A. I have not, and never will.

Q. Have you ever punished or disciplined a man for making an erasure in bellbook entries?

A. I have not.

The COURT: Of course that is where you determined he did not do it deliberately?

A. Deliberately.

Q. He made the entries and, in your opinion made an error, that is all?

A. Yes.

(Testimony of Ernest Bradford Colton.)

Miss PHILLIPS: Q. Why don't you discipline a man who make an error and did not make an intentional error?

A. We all make mistakes.

Q. What is the difficulty, if any, in getting exact counter readings?

A. The counter is changing all the time, at 18 knots, one of these digits at least will be changing three times a second. At some time all six would be changed simultaneously. It is very difficult to look at figures that are moving and read them instantly.

Q. How many digits show on the counter?

A. Six.

Q. Why, then, are there such records kept, as far as you know?

A. My opinion is that they are kept for the convenience of the Bureau in working out the performance of the ship as far as her standing in engineering competition, and we give them as much data as we possibly can for that purpose.

Q. The engineering rough log was offered in evidence, and it was kept by Mr. Kershaw?

A. Yes. That is the smooth log.

Q. Mr. Birchmire made some reference, I believe, to a rough log which he kept. I think he said he turned it into the engineer's [433] office. Have you got it?

A. It is aboard the ship.

Q. Can you send it down to us?

A. I can.

(Testimony of Ernest Bradford Colton.)

Q. Very well, I will attend to that, counsel, I think I can get it tomorrow. Mr. Colton intends to get to the ship tonight. Mr. Colton, with 27,000 horse power, available for going ahead, not all in use, what would you say as to the capacity of the "Chicago" to back full astern?

A. It should be up to 14 or 15 knots engine speed in one minute, that is engine speed.

Q. What would you say as to the calculations at which the engines could begin starting astern if 27,000 horsepower is available and not all in use at the time the order was given?

A. The more horsepower that is available, the quicker you can start going astern.

Q. What size sprayer plates were in use that morning in the engine room at 8 o'clock?

A. The largest that we have.

Q. What is that size?

A. That is called size 3008.

Q. Can you state the capacity of one boiler with these plates on in use to make steam?

A. Yes, in one minute, we take three thousand pounds of water and convert it into steam at three hundred pounds pressure in one minute.

Q. That is on one boiler?

A. Yes.

Miss PHILLIPS: That is all.

(Testimony of Ernest Bradford Colton.)

Recross Examination

Mr. LILLICK: Q. How do you distinguish between mandatory and permissive instructions in the Navy?

A. I did not hear the word "permissive."

The COURT: Mandatory or directive.

A. Directive is the word I understood.

Mr. LILLICK: Q. How do you distinguish between mandatory and directive instructions?

A. Mandatory instruction is given either point blank or when it is an order that allows no discretion in carrying out, you must carry it out. A directive order is [434] if the captain said "We will get away at 10 o'clock tomorrow morning", I would be ready to get under way at 10 o'clock tomorrow morning. If he said "Make as much speed as you can to get ready" that would be a directive order. With a mandatory order I would have no discretion in using my judgment. The decision has been made. Is that clear?

Q. Yes. You say the instructions on the engineer's bell books are directive, as I understand you?

A. I assume that they are directive.

Q. That was your own assumption?

A. Yes, that it is an instruction.

Q. Notwithstanding the fact that on each sheet of the bell book there is this language, "Alterations or erasures are not permitted, necessary corrections shall be made by notes written across the black lines of the record", and that language in heavy type, you feel that the instructions are directive?

(Testimony of Ernest Bradford Colton.)

A. It says "instructions", not "orders." I say it is directive.

Q. So that you distinguish between mandatory and directive because the mandatory instructions are orders, and the directive instructions are labeled "instructions"?

A. In this particular case, yes.

Mr. LILLICK: You do not want us to understand that the erasures on these log book sheets such as these are usual and customary, would you?

Miss PHILLIPS: That whole log is in evidence, your Honor. I think your Honor can refer back to entries before the hour and after, and see whether or not correction on the bell sheets was a customary thing during a four hour watch. I think if counsel will examine that he will see that before 8 o'clock here and there there are erasures and smutty finger marks, and the like.

Mr. LILLICK: I am not talking about smutty finger marks at all. I am talking only of erasures. I am not insisting upon an [435] answer to that question and will ask another.

A. I am ready to answer any question. I have no objection to answering any question.

The COURT: It is pretty well in the record that if a person made erasure, if you knew about it, you would discipline him, if he deliberately did it?

A. If I knew he deliberately made an erasure to cover something up that was wrong, I would not have him in my department.

(Testimony of Ernest Bradford Colton.)

Mr. LILLICK: Q. Just one more question about this, Mr. Colton. In all of your experience as chief engineer, have you ever before had engineer bell book records covering sheets from four engines during a watch where an interval of time at the outside, of 8 minutes is concerned, that three of the sheets had erasures?

Miss PHILLIPS: Just a moment; all of the "Chicago's" bell sheets are here in court from the time she was commissioned, and I suggest if counsel wants an answer to that question he ask Mr. Colton to look over the bell sheets. They are right here. He does not have to answer from memory.

Mr. LILLICK: I want an answer to that question.

The COURT: Purely from memory?

Mr. LILLICK: Purely from memory.

A. Purely from memory, I would say we never had a condition surrounding an emergency such as this, and therefore I could not compare it to any other case.

Mr. LILLICK: Q. Were you on the "Chicago" on July 11, 1933?

A. Yes.

Q. You remember going out of San Francisco harbor that day in a heavy fog?

A. I don't recall the date. I have been on the ship every time she was under way.

Mr. LILLICK: May we have the record of July 11th?

(Testimony of Ernest Bradford Colton.)

The COURT: Is that the only time you had an emergency full [436] astern?

A. No, that is not the only time, that is why I want to get the date.

Mr. LILLICK: Q. While we are getting these bell records, do you remember the occasion, if I remind you that on the "Chicago" on that day you very nearly had a collision with a tanker called the "Paul Shoup"?

Miss PHILLIPS: This is not cross examination.

Mr. LILLICK: It would not have been had not the witness replied to my question that the bell sheets, that he never had another case like this before, and it happens that this was exactly the same.

Miss PHILLIPS: I do not think there was. I have heard about that. I will withdraw my objection.

A. You were mentioning some merchant ship, I don't recall the name.

Mr. LILLICK: Q. "Paul Shoup"?

A. No.

Q. You don't recall the occasion?

A. I don't recall the occasion.

Mr. LILLICK: I am in error as to the date, it was July 20, 1933.

Q. I hand you the engineer's bell book record for engines 1, 2, 3, and 4, and will ask you to look at the entries from 0737 to 0755, and tell me whether

(Testimony of Ernest Bradford Colton.)

that was not almost an exactly similar situation that confronted you with the "Silver Palm" insofar as your bell sheets are concerned?

A. I have looked at them before and seen no emergency full speed astern during that time. May I distinguish between emergency full speed astern and full speed astern?

Q. My own record indicates that your log shows emergency full, sounded siren and collision quarters. I think it should be 0746.

A. This shows full speed astern at 0746. It also shows the same thing on No. 1 engine full speed astern, 0746. Also the same on No. 2 engine, also the same on No. 3 engine, no emergency full speed astern shown on that date.

Q. I show you the deck log book for the "Chicago" for July 20, [437] 1933 and ask you to read the entry there.

A. May I finish that other answer? I see two erasures on No. 3 engine room at that time.

Q. What time?

A. 7:45 to 7:49. Do you want to see this, your Honor? It is very much the same.

Mr. LILLICK: Do not answer this question until Miss Phillips has an opportunity to object. I show you the deck log for the "Chicago" for July 20, 1933, and the entry 0746, and will ask you to read that entry from 0746 to 0747.

Miss PHILLIPS: I want to make an objection here, that it is not proper cross examination, for

(Testimony of Ernest Bradford Colton.)

several reasons, first the witness has been examined previously upon the bell sheets of his own department. Counsel is now taking the records from another department and examining the witness upon them. That record is not shown to be either in the possession, custody or control of this witness, he is not shown to have had anything to do with that, and furthermore the witness, who made the record he is now showing him, is not available in court to be questioned. I think the examination now is proceeding beyond all lawful bounds of cross examination, and I make that objection.

Mr. LILLICK: May I be heard. Your Honor will remember that in testifying to the erasures upon the bell sheet for October 24 was being examined about the erasures. My next question was whether he had ever, on a similar occasion, known of such erasures, and he said he had never known of a similar situation. I now propose to contradict that statement by showing the witness records of his own ship on another occasion and ask him whether, having his recollection refreshed by this he still wishes to stand by his other statement. I am not offering it for the purpose of bringing into the record what happened on the other occasion at all.

Miss PHILLIPS: My answer to that is, the witness has answered [438] the question that he has found full astern orders in the record shown him and has found such erasures, so he has answered the question that counsel has put to him.

(Testimony of Ernest Bradford Colton.)

Mr. LILLICK: Q. What is a similar occasion, Mr. Colton, after having refreshed your recollection from the record?

A. I know in general that on that particular day, from hearsay evidence, which I understand is not admissible, that we came close to another ship, but I did not see the other ship and I did not see any entries. Any entries that she had on emergency full speed astern.

The COURT: You recall no orders to that effect?

A. No, I recall no orders to that effect. The officer of the deck may have confused full speed astern and emergency full speed astern, as it is often confused.

Mr. LILLICK: Q. Where were the erasures to which you referred a few moments ago?

A. I said they appeared like erasures. Here is either an erasure or a scratch over. There are three "i's" or two "i's". This is either an erasure or a scratch over it.

Q. That is on bell sheet of engine No. 3. Can you tell me who the man was on watch?

A. No, it only shows the officer in charge of the watch.

Q. After the other entries at the time we have spoken of, 0736 to 0744—

A. (Interrupting) Here is another one. There are a number of them there.

(Testimony of Ernest Bradford Colton.)

Q. But you are pointing to other times than 0736 to 0744.

A. I believe you said a six minute interval here, from 746 to 751 is five minutes. There are several scratch overs.

Q. I was saying from 0736 to 0744.

Miss PHILLIPS: He has indicated there are erasures.

A. Yes. I would say they do not keep as good a record when under [439] a terrific strain as that.

Q. Your explanation, then, of these bell records is that they can not be relied upon?

A. As far as the counter reading goes.

Q. Would you say that the Navy pays attention to erasures?

Miss PHILLIPS: I am going to object to that. Counsel is apparently going to go over all of what he covered this morning about the matter of erasures, and that is not proper recross examination.

Mr. LILLICK: I stand on my rights. I made this note when Miss Phillips was asking the witness questions on redirect examination, and I only have a question that was suggested to me by that.

The COURT: I will hear the question, but it seems to me it has been pretty well covered.

Mr. LILLICK: Q. Do you never pay any attention to erasures?

A. I pay close attention to erasures. I would call a man up and ask him why an erasure was made

(Testimony of Ernest Bradford Colton.)

and if he said he made it by mistake and tried to correct it, that is a sufficient explanation for me.

Q. You made no inquiry relative to the erasures on this day, October 24, 1933?

A. I had no opportunity to make any.

The COURT: He said the records were taken from him before he had a chance to, did you not?

A. Yes.

The COURT: He testified to that before.

Mr. LILLICK: Q. Mr. Colton, is this your signature?

A. That is my signature.

Q. And that covers the entries from what date?

A. From midnight on the 23rd to midnight on the 24th.

Q. At the top of the page 759 to the bottom of the page—

A. It covers this.

Q. From the top of page 759 to 761?

A. Yes, it covers the 24-hour period starting from midnight to midnight. [440]

Mr. LILLICK: We offer these three pages in evidence.

Miss PHILLIPS: That is objected to as immaterial, irrelevant and incompetent, unless counsel shows some parts he wants to offer, it has no relevancy to the issues in this case.

Mr. LILLICK: The relevancy is with respect to the hydrocon tests on the boilers and the boiler

(Testimony of Ernest Bradford Colton.)

pressure that the "Chicago" had when steaming at 12 knots, and thereafter entering under standard speed, 18 knots, indicating the lowering of the boiler pressure, or increase of steam.

Q. I understand, Mr. Colton, that is a record of the pressures, is it not?

A. That is a record of the performance for those 24 hours.

Mr. LILLICK: I think we are entitled to it.

Miss PHILLIPS: I do not make an objection, but I think this will not be of any help to the court unless the witness is asked to explain something about these boiler records.

Mr. LILLICK: I think we have a right to have it in.

The COURT: It will be received as Respondent's Exhibit No. 8.

(The document was marked "Respondent's Exhibit No. 8")

Miss PHILLIPS: I want to make the point it is not proper recross examination.

Mr. LILLICK: The question was gone into.

Miss PHILLIPS: This morning, your Honor, not on redirect examination.

The COURT: I presume that that is correct and the objection is good, but I presume if counsel requests that the examination be reopened I would have to allow it.

Mr. LILLICK: It will only take a minute or two.

(Testimony of Ernest Bradford Colton.)

Q. At no time while the hydrocon tests were being made did the "Chicago" run at a speed of less than 18 knots an hour?

A. Yes.

Q. At 12 knots an hour?

A. Not 12 knots; I don't recall all of the speeds for that particular day, but it would be right in the log [441] there.

Q. It would be on this sheet that I hold in my hand?

A. Yes.

Q. Do you remember when they commenced with the tests on the hydrocon?

A. I do not recall the exact hour.

Q. Can you tell from this log?

A. I believe so, on the afternoon of the 23rd at 4 o'clock.

Q. At what speed were you running then?

A. Twelve knots.

Q. For how long did you continue to make twelve knots?

A. I will have to have the bell sheets for that.

Q. Which do you wish?

A. Any one of them I think will give it. I do not see any change in speed for the rest of that day.

Q. Then you continued to run at twelve knots an hour until approximately 7:26 on the following morning, October 24?

A. I believe that is correct.

(Testimony of Ernest Bradford Colton.)

Q. And the hydrecon test was continued under the twelve knot speed up to 18?

A. It was continued right on through.

Q. Was it necessary to run 18 knots an hour to test out that hydrecon?

A. It would be desirable, the higher the speed the quicker we would complete the test.

Mr. LILLICK: We have offered these two sheets in evidence.

Miss PHILLIPS: I suggest that they be removed from the book so that the rest of it can go back.

The COURT: You have already offered it as No. 8. Those sheets may be marked.

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Miss PHILLIPS: At this time I would like to read into the record from page 152 of the deposition of Bernard Thomas Cox, master of the "Silver Palm" taken on Monday, November 6th, 1933:

"Miss PHILLIPS: Q. Captain Cox, I think you said that your vessel had seven or eight thousand tons of cargo on that morning?

A. About seven thousand—six to seven thousand, I said. [442]

"Q. I don't remember what it was, I just had a general figure in mind. How much had she still to go to be filled up?

"A. Another two thousand tons.

"Q. About 8500 is her capacity?

A. Nine thousand and five hundred I think—it is a little over 9000 anyway.

“Q. What is her gross tonnage?

A. 6373.”

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BALDWIN M. WOODS,

called for the United States, sworn:

Miss PHILLIPS: Q. Will you please give your full name?

A. Baldwin M. Woods.

Q. What is your occupation?

A. I am a professor of mechanical engineering.

Q. Where is your present position?

A. I am a professor of mechanical engineering and chairman of the Department of Mechanical Engineering at the University of California.

Q. Will you please state what university training you have had, what degrees you have, and what places you have studied?

A. I received a degree of electrical engineering from the University of Texas in 1908. I later studied electrical engineering, mathematical physics and mathematics and mechanics at the University of California, receiving a degree of Master of Science in 1909, and Doctor of Philosophy in 1912. In the 1912-13 I studied at the University of Paris and the University of Munich in the general field of mathematical physics and mechanics.

(Testimony of Baldwin M. Woods.)

Q. Have you taught courses in the field of engineering mechanics at the University of California?

A. Yes, I have taught at the University of California since 1910. Since 1915 I have taught in the field of engineering and have credit courses in analytical mechanics, in the dynamics of machinery, and in aero dynamics and hydro dynamics, that is to [443] say, the science of motion of water and other fluids in hydraulics and in dynamics of fluids.

Q. Is there any special field that you have been engaged in, in doing special work?

A. My field of special interest is of fluid mechanics, that is to say, the motion of bodies through fluids, aeroplanes, etc.

Q. Are you an author of any book on dynamics or articles?

A. With my colleague, Prof. Younger I have written a book on the dynamics of aeroplanes and I have myself conducted investigations in the field of air dynamics, and published a number of scientific articles, some on aeroplane propellers, for example.

Q. What scientific associations are you a member of?

A. I am a member of the American Society of Mechanical Engineers and of the executive committee of the San Francisco section, I am a member of the Institute of the Aeronautical Science, I am a member of the Sigma Psi and a fellow of the American Association for the Advancement of Sciences.

(Testimony of Baldwin M. Woods.)

Q. Professor Woods, do you know whether in planning the construction of ships, tests on models of ships are of value?

A. Yes, they are.

Q. Are such tests common?

A. Yes, they are now common and are becoming more so.

Q. Have the methods and scientific laws for conducting tests of ship models been established, in your opinion?

A. Yes, they have been.

Q. Of what value do you consider such tests?

A. Tests of ship models, for example, are of extreme value in projecting not merely the qualitative performance of ships but also quantitative. For example, tests conducted on models for the new ocean liners, the "Bremen" and "Europa" resulted in a saving of about 5000 horse power at full speed. Tests on aeroplanes are made today before [444] any substantial change in design is undertaken. Tests in wind tunnels. In the case of ships, no serious modification of laws formerly considered desirable would be made by any large company without model tests.

Q. Do you know how to conduct a model test?

A. Yes.

Q. What has been your experience in that line?

A. I have conducted numerous model tests on aeroplane propellers, and also on aeroplanes them-

(Testimony of Baldwin M. Woods.)

selves, wings, bodies, some on ship models; for the last four years we have been planning a ship model laboratory for the University and have conducted extensive studies and made general plans for the realization of such laboratory.

Q. Have you studied, or have you had an opportunity to study, and of the extensive or important ship model testing plants?

A. I have visited and studied two of the prominent ones, the one at Washington Naval yard proposed and I think designed by Admiral Taylor shortly after 1900 and still in existence; until recently it was the largest and best of the American ship testing plants, I have also visited and studied the one at Hamburg, Germany, which is the best in Europe, or largest; I know the man who designed it and I have discussed its characteristics with him.

Q. Have you made any model tests which bear upon or relate to the U. S. S. "Chicago" and motor ship "Silver Palm"?

A. Yes.

Q. Now, professor, I would like to have you explain how you made the model tests. Let us begin first with, Where did you make them?

A. I made them in a swimming pool on the campus at the entrance to the University on March 11th.

Q. Where is that pool located?

A. The pool is located in Strawberry Canyon. It is not now used as a swimming pool.

(Testimony of Baldwin M. Woods.)

Q. Can you state whether or not this pool was a proper place to make the model tests?

A. It was an excellent place. The disturbing conditions there were at a minimum. There was no breeze, [445] for example, to disturb the surface of the water unduly, so as to cause any errors in the test. The size of the pool was such as to avoid difficulties from boundary effects. The depth was adequate to avoid any difficulty with depth effect.

Q. What day did you make these tests?

A. On March 11.

Q. Did anybody assist you in making the tests?

A. My colleague assistant professor, Vogt.

Q. Now I would like you to go ahead and explain the method of making such test. I think you should tell something about the size of the models used, the scale they are, and the like.

A. As was indicated a few minutes ago, there are definite laws governing the making of model tests if the tests are to be valid. I have prepared a few sketches showing the relative positions of the vessels which were used, the models which were used to represent the vessels, and the result of those tests.

Q. Might I ask you what were the relative or comparative weights which you took for the two ships?

A. The weights of the two ships were taken approximately in the ratio of 13 to 12. What was actually achieved—

(Testimony of Baldwin M. Woods.)

Q. Just a minute; which ship did you take as weighing 13 and which ship did you take as weighing 12?

A. If I may call the models by the names of "Silver Palm" and "Chicago", the "Silver Palm" was taken to weigh 13; it actually weighed 9.8 pounds. The "Chicago" was taken as 12; it actually weighed 8.9 pounds. It will be seen that that ratio is not exact, but it is approximate.

Q. What did you take as the length of the two vessels?

A. We used two vessels, which are models of characteristic vessel form, having a length 40 inches for the "Silver Palm" and 49 inches for the "Chicago". This gives an approximately model ratio of 1 to 150; for example, if the "Chicago" is considered to have a length of 600 feet, the model is approximately 4 feet, the [446] ratio of the length is one to 150.

Q. Will you go ahead and describe the tests that you made?

A. In order to have the tests valid, it is necessary that the speed used shall be taken in the ratio of the square root of the model scale ratio. For example, if the "Silver Palm" were assumed to have a velocity of 12 knots, then the velocity for the model at 150, should bear the ratio of that divided by the square root of 150 times 12, which is almost exactly one knot. One knot is approximately 1.7 feet per

(Testimony of Baldwin M. Woods.)

second. You will recall that the common expression is not miles per hour, the technical phrase is knots, which means nautical miles per hour. One knot is therefore 1.7 feet per second. The tests were conducted in three cases. I have here the sketch showing the mode of impact.

Q. What angle did you take for the mode of impact. Will you explain that to the court and explain the diagram?

A. In this case the "Chicago" was taken approximately at rest. The "Silver Palm" is going toward it at a velocity representing 12 knots, in feet it is between one and a half feet per second. The angle between the mean lines of the ships is taken at 40 degrees. In conducting tests of this sort it is necessary to make a number of trials to obtain the impact at a given position with a given velocity, because, at the time of impact, of course, no force must be exerted on either ship, they must be moving freely, therefore you will have a number of misses for one hit. I mentioned that because I do not wish to imply that there were just one or two tests. We eliminated a large number that were not valid. In the first case the "Chicago" was considered at rest. The "Silver Palm" was brought in at a speed corresponding to 12 knots, that is to say a speed of between  $1\frac{1}{2}$  and 2 feet per second, or one and three-quarters feet per second. In this case after the [447] impact the positions were as shown in this

(Testimony of Baldwin M. Woods.)

diagram. I think it is desirable to have the two because we see what happens. The ship labeled "C" at the bow was turned to the right, the star-board, through an angle of some 50 degrees, perhaps, I should estimate that, and the one labeled the "Silver Palm" was turned to port through a larger angle, an angle of 80 or 90 degrees. This result was obtained with slight variation in the speed of the "Chicago" from the speed amounting to, or equivalent to one knot aft, to about one knot forward. I should say in a laboratory model it would be possible to equip both vessels with electrical motors and drive the propellers if we wanted the quantitative result. We did not do that. In case this vessel, for example the "Chicago" had propellers which were going astern at the time of the impact, it would, immediately thereafter be pulled toward the sternway, of course, and the bow of it would not rest so far forward, it might swing back here.

Miss PHILLIPS: I would like to have these two sketches marked as our exhibits next in order. The first in order is the one showing the angle of impact, and the next one showing the angle to which the two ships swung.

The COURT: They will be received and marked United States Exhibits 9-A and 9-B.

(Marked "United States Exhibits 9-A and 9-B".)

Miss PHILLIPS: Professor Woods, is it possi-

(Testimony of Baldwin M. Woods.)

ble for the bow representing the "Silver Palm", which is marked "S" here, to dig into the "Chicago's" side in that test?

A. The velocities were not sufficient for that in this case: I might say that in this position of impact, a little inclination of motion along the side of the "Chicago" was exhibited. There seemed to be—the impact was so nearly direct that there was little inclination of the prow of the ship to slide either way. [448] The vessels pulled around into that position.

Q. Into the position shown by 9-B?

A. Yes.

Q. Suppose you were to assume that the angle of impact was not quite 40 degrees, but there was a variation from it, either more than 40 or under 40, would there be any difference or was there any difference in the result of the swing of the two ships following the impact?

A. For a variation of as much as five or six degrees either way from the angle of 40 degrees we could detect no difference in the results. In a number of cases of course we did not come precisely at 40 degrees and therefore had a chance to observe.

Q. Now, did you conduct the tests in which the speed of the "Chicago" was taken at a figure other than the one you have just mentioned? As I understand, the last one was where the "Chicago" was at rest. Did you take any other speeds of the "Chicago"?

(Testimony of Baldwin M. Woods.)

A. Yes, we took speed very slowly astern and very slowly ahead, amounting to say one knot, one knot astern to one knot ahead.

Q. What results did you get on the swing of the two ships following the impact?

A. There was no essential change.

Q. The swing, as exhibited in 9-B would follow a blow as shown by 9-A if the "Silver Palm" was taken as going at 12 knots?

A. Yes.

Q. Do I understand you correctly?

A. Yes.

Q. If I misstate something I wish you would correct me as we go along, because I am out of my depth. Did you conduct any other tests?

A. We conducted a second series of tests in which the "Chicago" was given a forward velocity representing six knots, and the result of that impact is exhibited in this figure. The bows of the two ships are almost at 180 degrees; the tendency to side-swipe is very marked. The side-swiping of course occurred in this case since there was no cutting in, I mean no penetration of the side of the ship by the bow of the "Silver Palm". [449]

Q. In this second series of tests as exhibited, what was the angle of impact that you gave for the two ships, to hit at?

A. This is the last one.

Q. May I have the 9-A?

(Testimony of Baldwin M. Woods.)

A. The angle of impact in either case was the same. This was repeated, and of course with the "Chicago" in motion it became necessary to have even more trials to get the impact, but in every case where the "Chicago" had its forward equivalent roughly to six knots, the results were indicated on this diagram. It will be noted that the "Chicago" is deflected slightly from its path, but very slightly. I have drawn in here two lines. This line shows the direction that the ship came at before impact, and the lines drawn through the bow shows the position after the impact.

Miss PHILLIPS: May I have this last exhibit marked next in order, that being the last exhibit to which the witness has referred?

The COURT: It will be received as United States Exhibit 10.

(The diagram showing "Chicago" six knots ahead and the "Silver Palm" 12 knots ahead was marked U. S. Exhibit 10.)

Miss PHILLIPS: In other words, in conducting these two tests, I referred to the fact that the "Chicago" could not be taken in your tests as being gouged into. It would not be possible for you to show on the two models, or is it possible to show the effect of a helm, whether the helm was being used on either ship?

A. For the case in which the "Chicago" was at rest, it would make no difference, since the helm is

(Testimony of Baldwin M. Woods.)

inoperative until the ship has way on it, or since the propellers themselves are not operating. In the other case, the helm was not used, was not simulated in the test.

Q. Does that make any difference in the conclusion you would reach upon the model test?

A. No, it does not. The result of the [450] model test is the result of impact, and the impact is the same. The effect of the helm would be that of directing a vessel before or after, but the impact would be essentially unmodified.

Q. Did you make any other series of tests exhibiting any other speeds of the "Chicago" other than you have described?

A. I made a third series in which the "Chicago" was given motion astern simulating four knots. Again the impact was secured, the "Chicago" going astern about  $7/10$  of a foot per second which amounts to four knots, and the "Silver Palm" was allowed to coast into it at the angle and in the position shown.

Q. That is the same angle of 40 degrees?

A. The same as before, in the preceding exhibit?

Q. What result did you get then, if the "Chicago" was taken as going astern four knots?

A. A very peculiar result. The two vessels remained in the same relative positions, but both turned 90 degrees. The "Chicago" which was going in this direction is now turned completely through

(Testimony of Baldwin M. Woods.)

90 degrees, and the "Silver Palm" follows it around—the two ships turn about a common center, about 90 degrees and that is the result.

Miss PHILLIPS: I would like to have this last sketch showing the result of an impact with the "Chicago" going astern at four knots, marked as our exhibit next in order.

The COURT: It will be marked U. S. Exhibit 11 in evidence.

(The sketch was marked "U. S. Exhibit 11".)

Miss PHILLIPS: Q. Professor Woods, have you seen and examined the photographs I am now handing you, or photographs similar to the ones I am now handing you. Please examine them.

A. Yes, I have seen a number of these.

Q. I observe that you are looking first at the pictures of the "Silver Palm" which were offered in evidence as Government's [451] Exhibit 3. Have you seen these pictures?

A. Yes, I have.

Q. And the pictures of the "Chicago" or similar pictures, have you seen them?

A. I have seen either these or similar pictures; I recognize some of them.

Q. I would like to point out to you that the witness who took these pictures of the "Silver Palm" testified that they were taken after arrival in port, while she was at the dock prior to the making of repairs, and that the group of pictures of the

(Testimony of Baldwin M. Woods.)

“Chicago” which you examined were testified to by the witness taking the pictures, as taken upon arrival at Mare Island, immediately, even before she got into dry dock, while she was in dry dock and prior to the undertaking of any repairs. Now do these pictures tell you anything about the relative speed of the two vessels?

A. Yes. I should like to speak first on the “Silver Palm”.

Q. Go right ahead and follow any order you want.

A. From the result of the model tests it would appear from the damage done to the “Silver Palm” and the line of the final position taken by what may be termed the forward seam—

Q. (Interrupting) Will you point out to the court the seam?

A. The forward seam is in this position. The final position of the forward seam would indicate that the impact was almost directly in a line of the longitudinal axis of the ship, in other words that the bow was folded back into the ship directly, and that is a condition which could happen, according to our tests, only if the “Chicago” was approximately at rest.

The COURT: How fast do you assume that the speed of the “Silver Palm” was?

A. I assumed, I took a speed simulating 12 knots.

Q. Twelve knots?

(Testimony of Baldwin M. Woods.)

A. Yes. I might say that in conducting experiments there was no means of maintaining that speed exactly the same. There might have been a variation of from as low as [452] ten to as high as 13 knots, I would judge; we actually found no change in the result to to such variation; in a large number of trials that were conducted, I suppose we must have had—I am afraid to estimate—forty or fifty collisions. In the next place I should remark that had the conditions simulated in Test 2, obtained, that is to say where the “Chicago” had considerable forward velocity, estimated at 6 knots, the side-swiping effect would have tended to bend the bow of this ship to port.

Miss PHILLIPS: You mean the “Silver Palm”?

A. The “Silver Palm” to port. In fact it is quite evident, depending upon the strength of the blow and the strength of the resisting plates, one of two results would have happened; this would have been folded, I mean the prow of the “Silver Palm” would have been folded or sheared to port, possibly sheared off entirely. The force of the side-swiping was so marked in the model, that the fact there was no penetration did not influence us, notwithstanding it made it easier to observe the distance of these tangential forces.

Q. That is, when you gave the “Chicago” a speed of six knots?

A. The side-swiping tendency is marked enough to obtain that result.

(Testimony of Baldwin M. Woods.)

Q. Suppose you gave the "Chicago" a speed in excess of six knots?

A. All tests of that sort indicated even greater side-swiping.

Q. Will you proceed with your comments on these pictures?

A. The impression one gains particularly about the cut in the "Chicago" is of course that the left hand side of the cut represents a clean shear of the plate. If one considers the direction of the impact as described, it is apparent that this side of the rammed portion would be thrown in tension and that after the bow penetrated, even if the "Chicago" were at rest, and the line as indicated, there would be an increased tendency on the after side [453] to fold back the plates; that is fully indicated in the pictures where the plates on the after side are pulled back.

Q. You are now pointing to Government's Exhibit 2F as illustrating what you have just referred to?

A. Yes. Those were the major conclusions that I drew from examining the pictures.

Q. Did you reach any conclusion from these pictures as to the speed of the "Chicago" at the time of impact?

A. I should draw the conclusion that the speed of the "Chicago" at the time of impact was within a range of one knot astern to one knot ahead.

(Testimony of Baldwin M. Woods.)

Q. If it be assumed that the speed of the "Chicago" were in excess of one knot ahead, taking any assumed speed you choose, could you tell us what difference in the physical result of the blow you would expect to find?

A. I am now examining this picture 2-F. Had the speed of the "Chicago" been forward in excess of one, or at most two knots, evidence of side-swiping would begin to be present; in other words the clean V which is exhibited here would become a wider gouge or else the prow of the "Silver Palm" would have been sheared off.

Q. Professor Woods, we have referred now to a speed of the "Silver Palm"; giving her a weight of approximately 13,000 tons, have you considered what the pounds of kinetic energy would be of such a blow as that?

A. Yes, I have considered the kinetic energy of a vessel of 13,000 long tons weight and have drawn a diagram to show the variation of that kinetic energy with the speed. This diagram starts with a kinetic energy at 14 knots, and diminishes to zero speed. The upper curve represents the kinetic energy of the "Silver Palm", the lower that of the "Chicago", although each must be taken as its own speed. If the "Silver Palm" had a speed of twelve knots, this kinetic energy was roughly 187,000,000 feet pounds at the time. The kinetic energy of the "Chicago" at any speed can be similarly taken from the curve. [454]

(Testimony of Baldwin M. Woods.)

Q. Can you tell us the formula you used, or is that too complicated? What is the formula you used?

A. The formula to get the kinetic energy poundage for any body having a straight line motion forward, regardless of the size used, is one half the mass of the body, which is its weight, divided by the acceleration due to gravity, times the speed of the vessel in feet per second.

Q. Professor Woods, I have another question I would like to ask you? What is meant by the term "relative motion"?

A. Motion as we recognize it normally, is recognized as always relative. Ordinarily, if we think of motion, the earth is considered to be at rest. If you are talking of the solar system you frequently think of the sun as at rest. Always there must be a plane we say in physics which is considered at rest. Now it makes a great deal of difference in your impression of the motion according to the body or bodies which you consider to be at rest. If, for example, you are on a vessel at sea, most of your impressions are based upon the assumption that the vessel is at rest. If you are swimming in the ocean your impression would be based upon the assumption that the ocean is at rest. Your motion is relative to it. When you combine the impressions under one condition to those under another you get different problems of relative motion.

(Testimony of Baldwin M. Woods.)

Q. What is the effect of wind in forming an opinion upon relative motion when the ship is at sea?

A. It is an common expression of mariners that the effect of the wind vitiates judgment as to velocity, since the waves and white caps formed are determined in large degree by the wind. On this account if one regards the waves as at rest when they are not, and judges the speed of a vessel relative to the waves, he will get false results.

Q. I wish you would consider the case of a ship, let us assume [455] that it is slowly backing, and that it is struck on the port bow by a vessel going straight ahead at an angle of approximately 40 degrees—what visual impression would be obtained by anyone on the ship that was struck?

A. Under the assumed conditions, if the witness is assumed to be on a line of the incoming ship—if I may refer to this—if the witness is on this portion of the ship and this vessel is coming straight on and this one is backing slowly, then the motion astern of this ship gradually exposes more of the starboard of this vessel to his view, more of the side of the oncoming ship, say the “Silver Palm”. That is the same impression that you would have were this vessel at rest and the “Silver Palm” turning to port. If, therefore, he conceived this vessel at rest he would assume that the “Silver Palm” was moving to port, when in fact she was coming straight ahead.

(Testimony of Baldwin M. Woods.)

Q. If, in fact, the vessel that is struck is moving astern and the oncoming vessel is pursuing a straight course, what would be the visual impression of the witness on the ship that is struck?

A. The impression of the witness on the ship that is struck, if his vessel is moving astern and the other is coming straight ahead, is that the vessel coming toward him is turning to port.

Q. Professor Woods, going back to the model tests that you conducted, in conducting these tests did you follow the laws for conducting of model tests to the best of your knowledge and ability?

A. Yes, we did.

Miss PHILLIPS: You may cross examine.

#### Cross Examination.

Mr. LILLICK: Q. In the last diagram that you used in connection with showing what the impression of an observer would be upon the "Chicago", would he not have had the same impression as that you [456] have described had the "Chicago" been bodily coming over to the left?

A. At right angles to the water?

Q. At right angles through the water or in a motion ahead, but slipping off sideways, we will say, as much as 50 yards?

A. Had the motion of the vessel which was struck been such as to expose an increasing portion, an increasing view of the starboard side of the "Silver Palm" the impression would have been conveyed to

(Testimony of Baldwin M. Woods.)

the observer that the "Silver Palm" was turning to port.

Q. In other words, exactly the same impression that you have a moment or two ago, said that the observer would have had if in fact, the "Chicago" had been going astern?

A. Depending upon the magnitude, yes.

Q. But the same general impression would have been given to him?

A. Yes.

Q. In the experiment that you conducted, professor, models were solid models, were they, solid pieces of wood?

A. They were in part yes, and in part no; that is to say they were made of laminations, laminated wood in order to maintain their shape under repeated tests.

Q. In other words, they were solid wood, and if I understand, laminated means one layer upon the other?

A. Yes.

Q. So that they would withstand the impact?

A. Well, they would withstand not merely the impact, but deterioration of time, and would not change shape too greatly.

Q. In continuous tests that you were making over a longer period of time?

A. It really has no reference to the tests.

(Testimony of Baldwin M. Woods.)

Q. In your experiments did you pay any attention whatever to the maneuverability of the vessels as to being able to turn to the right or to the left?

A. No.

Q. There was no account taken, in the experiment, of a possible deflecting momentum because of the "Silver Palm" turning to the [457] right?

A. I do not understand the term "deflecting momentum."

Q. I am going beyond my depth, professor, so I shall be glad to have you ask me if my question is not clear. I will rephrase the question. If a model such as that you conducted this experiment with had been equipped with a rudder for an appreciable period, sufficient to change the course of the "Silver Palm" from straight ahead to a starboard course, would the "Silver Palm", in being, as I said, deflected from her course, have her speed at all affected?

Miss PHILLIPS: I object to that as unintelligible.

A. If I may take the diagram—

Mr. LILLICK: If the witness informs me that any of my questions are unintelligible I will try to make them clear.

Miss PHILLIPS: I will withdraw the objection.

A. If I may interpret the question, I assume what was meant is this, that, had the "Silver Palm"—First may I make a distinction—If the "Silver

(Testimony of Baldwin M. Woods.)

Palm" had been turned through an angle, but is not at a given instant through turning, then there is not possible change in the result. The question must relate to the instantaneous condition of the body in motion. If the "Silver Palm", at the moment of impact, were still turning to starboard, its angular momentum, or a portion of its angular energy is one of rotation.

Q. In other words, the momentum which would have been hers had she been going straight ahead, is to some extent deflected by it being taken up by the stern and shoved off sideways: Is that a correct statement?

A. I can not see it that way. The kinetic energy then consists of two parts, the swing of the ship considered as the center of gravity moving in the direction in which it is moved, plus the swing of rotation of the ship, considering it rotating about a center of gravity and the effect of this latter would be to increase the side-swiping effect. [458]

Q. But as to the straight momentum, would the "Silver Palm", had she been turning on a hard starboard helm, have had the impact itself lessened by turning to the right instead of going straight ahead?

A. It would be very difficult to say.

Q. All of these experiments that you performed, as I understand it, were performed with the "Silver Palm" coming straight toward the model of the "Chicago"?

A. Yes, approximately.

(Testimony of Baldwin M. Woods.)

Q. How did you conduct your experiments, with a string attached to the stem of the model of the "Silver Palm"?

A. Yes.

Q. And a string attached to the model of the "Chicago" at the stem?

A. Yes, it was necessary to supplement the string with rods, etc., to make the vessel behave as desired.

Q. What power did you use to pull them—how did you have your power rigged up so you had a definite speed of twelve knots an hour in the comparative way you measured it?

A. We practiced pulling the vessel until we could repeatedly check with a stop watch, that the distance measured along the side of the basin came within ten per cent of the speed which we desired.

Q. Did you walk, or did the person who was on the end of the string do the walking, or was the course over such a short space of water that he just pulled it with his hand?

A. It was not necessary to walk, since, when the vessel had been given an initial pull it would continue on its way gradually losing speed and arriving at approximately the speed desired.

Q. From what position at rest was the model of the "Silver Palm" started?

A. The "Silver Palm" was started from a position at rest in the direction in which it was desired to have it moved.

(Testimony of Baldwin M. Woods.)

Q. How far away from the model of the “Chicago” waiting for the impact?

A. From ten to twenty feet, various distances—I should estimate [459] about 15 feet—far enough to allow any initial turbulence in the water, or any other disturbance to be entirely out of the range of this experiment.

Q. Was that string kept taut from the moment the model started in the water?

A. No; immediately the vessel had acquired the necessary way the string was dropped.

Q. So that after it had acquired the necessary way over the 15 feet, you thereafter, over a series of forty experiments, you placed your velocity at the time of the impact at what your average result was, and judged the velocity of the impact from that?

Miss PHILLIPS: I think that question has several questions in it, your Honor.

Mr. LILLICK: I will try to reframe it. Q. Having started your model from 15 feet away, and after you had given it the initial impetus I understand, you thereafter permitted it to come up to the model of the “Chicago” without putting on any more pressure on the string: Is that right?

A. Yes.

Q. So that over your series of 40 experiments, this model in each instance, was started 15 feet away on a string, and you by mathematical calculation,

(Testimony of Baldwin M. Woods.)

determined than when it struck the model of the "Chicago" it was proceeding at the rate of speed that you considered as of one to 120, did you say?

A. No, the scale ratio is one to 150. The velocity ratio should be in the ratio of the square root, that is about one to the square root of 150, which is a bit more than 12.

Q. As I understand it, you started the model with an initial pull, withdrew that pull or pressure, and then, over a series of 40 experiments, computed that by comparing the pressure you used, when you did finally arrive at the diagram that you have used, the "Silver Palm" at the moment of her impact was going at the rate [460] of speed that was given you as 12 knots?

A. I might say that we repeated the experiment a number of times, in each case starting the "Silver Palm" as suggested with a string and each time we observed what happened, waiting until the two vessels had reached a position, until the two vessels were approximately at rest in the water.

Q. But what I am trying to ascertain, is how did you figure her speed of twelve knots at the moment of impact. How did you arrive at that momentum?

A. To obtain the energy at the moment of impact, it is not necessary to conduct any experiment at all. One can compute that from the normal laws of mechanics, but the computations for the

(Testimony of Baldwin M. Woods.)

energy were made without reference to the experiment.

Q. But in order to obtain the result on your diagram in relation to the position the vessel occupied after the impact, it was necessary for you, was it not, to so work out your problem that at the moment of impact the "Silver Palm" would be going at the velocity stated, 12 knots?

A. The "Silver Palm" was started at a velocity of 12 knots and allowed to coast after the initial start, gradually losing velocity, and it has been assumed, for the sake of simplicity, and which is a matter of observation, that the velocity at the time of impact was approximately that; undoubtedly it had dropped slightly.

Q. And yet at the commencement of the 15 feet, the initial pull was the 12 knot computation?

A. It was not a question of computation but of pulling, measured from the side, the velocity obtained, we could get the speed corresponding. That speed is roughly 1.7 feet per second.

Q. So that, as I understand it, on the edge of the pool you had a measure check-off in markers, did you, so that you could start the "Silver Palm" more than 15 feet away, or just 15 feet?

A. We practiced on one side of the pool getting the "Silver Palm" [461] to move roughly 1.7 feet, perhaps 2 feet per second, from 1.5 up to 2 feet, or approximately 2 feet per second, and having acquired that adjustment of the speed, we then pro-

(Testimony of Baldwin M. Woods.)

ceeded without measurement on the individual trials.

Q. At 15 feet away from the model of the "Chicago" you released the pressure so that thereafter she coasted up to the "Chicago"?

A. Yes, we found to our great interest that the variation of even 15 or 20 per cent in the speed made no difference in the result.

Q. How did you compute that result as what happened? You do not mean to tell me that it made a difference of 15 or 20 per cent pressure at the impact, did you?

A. We made no computation, we observed.

Q. Then you mean it made a difference of 20 per cent in relation to the movement of the bow of the "Chicago" after she struck. What is that 20 per cent taken of?

A. No, what I meant is this, that if the variation in the speed which we succeeded in giving the "Silver Palm" amounted to 15 or 20 per cent range, based on ten per cent above 12 knots, to 10 per cent below, the experiment when repeated several times gave no difference in the result.

Q. And that result was only to find out what happened to the vessel after they had struck, in relation to how they would finally end at rest. That was the object of the experiment was it?

A. It was one of the achieved results.

Q. That was one of the achieved results?

A. Yes.

(Testimony of Baldwin M. Woods.)

Q. You had, of course, in the pool a solid body of water, there were no waves?

A. Immaterial.

Q. You think it would be immaterial?

A. Yes. I mean to say that the surface of the water was so nearly calm that we would not have a wave effect to consider.

Q. Professor, I have been fortunate enough myself to have gone over to that pool and have seen an experiment, a test by a professor, and when I was there it is my recollection that those [462] making the tests were testing out the speed of a vessel by working out the coefficient of the stem. Can you explain that?

A. It happens that it is a little difficult to tell where to begin. It happens that the resistance to the motion of a vessel through the water is made up of two principal parts, the resistance of the water to the sub structure, we call it the portion under the ship; the surface resistance, which may be affected by the waves, and the resistance of the superstructure, which is affected by the wind. The resistance of the sub-structure is materially affected by the stream line of it, that is to say, the form of the hull, so that the fluid, in passing by is giving minimum disturbance. The two portions of the vessel which require most careful study in that case, are the

(Testimony of Baldwin M. Woods.)

proW and the hull. We are greatly indebted to Admiral Taylor for, in a measure discovering, or at least making the world well aware of the merits of what is known as the bulbous bow. The bulbous bow has been copied by many other nations and is used on the cruisers and battleships of our fleet. It is also used more recently on a number of the largest and fastest vessels afloat, particularly the "Bremen" and "Europa" as two famous examples. The proW coefficient, if one wishes to call it that, would be affected by the design of the bulbous bow. The hull coefficient would be affected so that it is very difficult to measure without the propellers in place, what would be affected by the streamline at the hull.

Q. Now in the experiment, did the model of the "Chicago" that you used, have a form such as you know that of the "Chicago" to be?

A. Sufficiently for the purposes of experiment.

Q. What do you mean by "sufficiently for the purposes of experiment"?

A. I mean simply to say that, to determine what would happen to two masses after impact, it is not necessary to have [463] the details in form the same, provided the general shape is the same.

Q. Would it make no difference if at the time of the impact, even in your models, assuming a speed of, I think you have given, as six knots—am I right, six knots for the "Chicago" in one experiment?

A. Yes.

(Testimony of Baldwin M. Woods.)

Q. If at that moment she was turning on a hard astarboard helm, with all of her engines backing at full power?

A. If I understand your question it is, Would the combined effect of the engines reversing, starboard rudder and variation form of the hull, make a difference in the impact?

Q. Yes.

The COURT: You are assuming that she is dead in the water?

Mr. LILLICK: No, I am assuming that she is proceeding at a rate of six knots through the water at the time of the impact, that she was then on a hard astarboard helm with all four propellers backing at full emergency power, the witness having given us the diagram of the result after the vessels came together.

The COURT: I was wondering about the speed you were talking about.

A. In the model test it is my judgment that the shape of the vessel would not be a contributing factor, the minor modifications in that case would not be a contributing factor to the result.

Q. So that it would not make any difference whether she were going ahead or astern?

A. As far as the shape is concerned.

Q. The speed is increased by the sharp prow and the bulbous streamline effect, isn't it?

(Testimony of Baldwin M. Woods.)

A. The streamline and the bulbous bow reduces the resistance very much and gives power to propel the vessel at greater speed.

Q. And gives her greater maneuverability also, does it not? In [464] other words, she would turn more quickly?

A. There is not necessarily a direct connection between the maneuverability and the bulbous bow.

Q. Let us put it this way, professor, if a 12,000 ton vessel is lying dead in the water motionless, would an impact from another vessel cause her to swing around in the same position at that impact, and with a 12,000 ton vessel operating under a six knot speed with a hard astarboard helm, and at that moment turning to starboard with all her engines reversing, would the results be the same?

A. The difference in forces I should have to compute to determine the percentage of effect of the propellers and the helm, under those conditions. The very great disparity in the forces would, however, lead me to judge, subject to minor alterations upon computation, that the effect of the blow is so incomparably greater than the effect of the other elements introduced, that the change from the conditions found, without rudder operating and propeller in reverse, would not be material.

Q. What do you mean by the "disparity"?

The COURT: How much longer do you think you will take?

(Testimony of Baldwin M. Woods.)

Mr. LILLICK: I will take at least 15 minutes.

Miss PHILLIPS: I have some more examination.

The COURT: I think we had better take an adjournment now until tomorrow morning at 10 o'clock.

(At this time an adjournment was taken until tomorrow, Thursday, March 22, at 10 o'clock a. m.)

Filed June 19, 1934. [465]

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Thursday, March 22nd, 1934.

BALDWIN M. WOODS

Recalled

Cross Examination Resumed.

Mr. LILLICK: May it please the court, when the depositions were taken of the officers and crew of the "Silver Palm" we had with us all of the log books, rough and smooth and deck, including the bell books, which Miss Phillips agreed might be left at our office until they might be needed in court, and having been asked for this morning we have produced them to the district attorney.

Miss PHILLIPS: That is correct.

Mr. LILLICK: Q. Professor Woods, in conducting your experiments or your tests, did you attempt to have the model you used for the "Silver Palm" strike the "Chicago" and rebound and then strike the "Chicago" again?

(Testimony of Baldwin M. Woods.)

A. The direct answer is "No". I should need to qualify that, however, by saying that in one or two of the experiments it did, in effect, operate in that fashion.

Q. But you did not attempt to make the model of the "Silver Palm" strike the "Chicago", rebound and then strike again?

A. No. I should consider that quite unscientific.

Q. When you made the experiment on some of the tests where you tried to make the "Chicago" go at a relative speed of six knots, did any of the trials result in a seeming rebound and a second strike?

A. I don't remember.

Q. You are unable to say, then, whether the instances of which you have just spoken where that seemed to be true were in those instances where the "Chicago" was going at a relative speed of six knots?

A. I am unable to say, but I recall several cases in which it rebounded when the "Chicago" was at rest.

Q. You recall none when your model of the "Chicago" was in relative motion at six knots an hour?

A. I don't recall any.

Q. Did you perform any tests with the model of the "Chicago" proceeding at a relative rate of speed in excess of six knots?

A. Yes.

Q. At what rate of speed?

(Testimony of Baldwin M. Woods.)

A. Between six and ten. I should like to correct that, between six and twelve.

Q. Did the results in those instances where the model was moving at a relative rate of speed of six to twelve, agree with the results where the model was moving at from four to six?

A. Yes, with an accentuation of what I should call a side swiping. In every such case the vessels went by each other, in other words, immediately after the impact they went so that the prows were, after the impact, facing in opposite directions.

Q. And with your models there was, of course, no puncturing of the hull of the model of the "Chicago"?

A. No.

Q. In other words, there was no impinging upon the model of the "Chicago", cutting in with a forceful holding of the bow of the model of the "Silver Palm" in the model of the "Chicago"?

A. Unfortunately I put a different significance to the word "impinging". Would you mind restating it?

Q. I will reframe the question. I think "impinging" is not a proper word. In other words, your tests did not enable you to come to any conclusions with respect to what might have happened had the model of the "Silver Palm" used by you cut into the hull of the model of the "Chicago" so that the bow of the model of the "Silver Palm" would have been held in the gash in the model of the "Chicago"?

(Testimony of Baldwin M. Woods.)

A. Oh yes. I was led to quite a definite conclusion.

Q. Did your experiment enable you to do that?

A. The motion of the two models at impact was such as to indicate clearly the character of the forces existing; the character of those forces is what would determine what happened to the prow of the "Silver Palm" or the side of the "Chicago" in case there had been intrusion of the prow into the port side of the "Chicago". [467]

Q. Did I understand you that is your opinion based upon the tests you made, that had the "Chicago" been going at a rate of speed of 12 knots an hour the "Chicago" would have kept on going in the same general direction in which she was, and the "Silver Palm" sideswiped her and gone in an opposite direction?

A. Yes, that is my conclusion.

Q. That is, the bow of the "Silver Palm" would not have been caught in the gash made in the "Chicago"?

A. I do not mean to imply that it would not have made a gash or cut, but in my judgment that would not have been sufficient to hold it in that position.

Q. In other words, she would have struck and, as you put it, gone ahead, side-swiping the "Chicago"?

A. Yes.

(Testimony of Baldwin M. Woods.)

Q. In other words, somewhat the same relative positions indicated by United States Exhibit No. 10, with the bows of the respective vessels pointing in opposite directions?

A. Yes. With greater speed there would have been greater displacement.

Q. Then in none of your trials with these two wooden models, since there was no puncture of the model representing the "Chicago", you made no allowance for a holding of the model of the "Silver Palm" in the side of the "Chicago"?

A. I don't quite understand you.

Q. May I have the question repeated?

The COURT: Read the question.

(The last question was repeated by the reporter.)

A. I have made allowance in the interpretation of the experiment. No arrangements were made to have it puncture the other, no.

Mr. LILLICK: Q. Before you made your tests were you informed that the instant before the collision the engines of the "Silver Palm" were put full speed ahead?

A. No, I was not. May I have that question read again?

The COURT: Read the question. [468]

(The question was repeated by the reporter.)

A. That answer is correct.

Mr. LILLICK: Q. If, an instant before the collision, the engines of the "Silver Palm" had

(Testimony of Baldwin M. Woods.)

been put full speed ahead what effect would that have had in your opinion, with respect to keeping the model of the "Silver Palm" in the side of your model of the "Chicago", if your model of the "Chicago" had been puncturable, and your models had had engines?

A. You are still referring to the case with the "Chicago" moving forward at six knots?

Q. In any position, moving forward or still in the water.

A. It would depend upon the elapsed time of the starting of the engines of the "Silver Palm" and the completion of penetration of the two vessels. The propellers of the "Silver Palm", if the initial conditions be considered, is one of being nearly at rest: they were being turned—Let me with that "nearly at rest"—they were being turned by the fluid current which was driving the propellers and therefore the engines, instead of the reverse condition which exists when the engines are driven forward. The same thing happens when an aeroplane dives with an engine out, the propeller is rotated by the air. Located in the water, when a ship is coasting above a speed of five or six knots, depending on conditions, the propellers are turned by the fluid, and when power is suddenly given to a large engine of the character used on the "Silver Palm", the first impulses begin to relieve the propeller of the drive—Let me put it another way. The first impulse from the propellers up to the point

(Testimony of Baldwin M. Woods.)

where their speed results in no thrust—in the beginning they have negative thrust; then as they pass to a higher speed they take over the charge of pushing the vessel. This would require several seconds during the speeding up of the engines. The penetration, should the throttle be given to the engine so that [469] it would begin firing at the instant of the impact—it would depend upon the time of penetration as to whether any results were felt by the ship.

Q. Then would you say that with the propellers still turning over on the “Silver Palm” and engine power applied immediately, that it would take, let us say, two or three seconds for that power to be applied?

A. I dislike to guess. I could form an opinion after examining my notes, on the subject, which I have not here unfortunately. But my first estimate would be something of the order not greater than five seconds.

Q. What kind of an engine are you assuming from that?

A. I am assuming a modern Diesel engine on the “Silver Palm”.

Q. Would there be any difference between a Diesel engine in that respect, and a reciprocating engine?

A. A reciprocating steam engine?

Q. Yes.

A. Yes; in that the net over all effect there would be very little different, because the time of penetration, which I have not computed, but which I form

(Testimony of Baldwin M. Woods.)

a reasonable estimate of, if I were to compute it, is probably not much greater, if any, than the time required for either engine to come up to speed. Reciprocating steam engines are not involved on either ship, are they?

Q. No, they are not.

A. The reversing of reciprocating engines characterized by slow speed and large reciprocating masses is difficult to state.

Q. Which is quicker in operation, a reciprocating steam engine or Diesel engine?

A. That depends. If one is referring to maneuvering at speeds below the speed at which the outside current will turn over the propeller, then a modern Diesel engine without brakes is a very quick performer. Your Honor there are many types of drive in ships, and generalizing, we have electric drives which give very quick reversibility, we have indirect electrical drives, we have drives by turbines which are steam turbines, we have many types [470] of Diesel engines, four stroke cycle and two stroke cycle, and those drives may be combined also with electrical drives. I could go into a discussion one by one, if you wanted it.

Q. I would not care to have that. Professor Woods, let me read to you the testimony of Captain Kays, who was on the bridge of the "Chicago" at the time, and in charge of the vessel's maneuvers. I am reading from page 56: "The vessel, which I found out afterwards was the 'Silver Palm', recoiled as she struck, the 'Chicago' heeled heavily

(Testimony of Baldwin M. Woods.)

to starboard and I got the mental impression that she was swinging to the right. The 'Chicago', as she came back, rolled back to port, nearly touched the 'Silver Palm' again, and I think it was about the time it struck that I ordered one-third slow engine, and then I continued to back so that she would back away from her, and we pulled away a short distance and then stopped, the 'Silver Palm' lying then more or less parallel to us some distance away." Assuming for the purpose of this question that what I have just read accurately depicts what Captain Kays saw and what he did, at what time subsequent to the collision would you say that the two vessels were in the position you have assigned to them in your diagram, United States Exhibit 9-B?

A. I did not measure the distance in the case of the models, and without having done so I could not estimate the time for the case of the ships themselves.

Q. Did you take into consideration the fact that the "Chicago's" engines were ordered one-third slow as the "Silver Palm" touched the "Chicago" again, and that the engines of the "Chicago" continued to back until they had pulled away a short distance from her when you performed the tests?

A. I took into consideration in interpretation of the tests the pitch of the propellers, and discovered that neither for full speed astern nor any fraction, did they modify the result materially. I ran through the compu- [471] tation again last night and dis-

(Testimony of Baldwin M. Woods.)

covered the difference to be less than two per cent, which is smaller than the possible error of observation.

Q. Professor Woods, will you please listen to this question that I asked a moment ago, which I am now going to ask to be repeated and answer the question. May we have the question read, your Honor?

The COURT: Read the question.

(The question was repeated by the reporter.)

Mr. LILLICK: That question may be answered yes or no Professor Woods.

A. If I answer it "Yes" I shall have to qualify it.

Q. I am entitled to an answer "Yes" or "No" as I understand it, and then you can qualify it if you wish.

The COURT: You can qualify it. If you can answer it yes or no, and then if you wish to make an explanation you may.

A. Yes.

Q. Then you may give your explanation if you wish to.

A. When I answered it "yes" I did not mean to say that I made physical modifications of the vessel or the conditions of the test, but I analyzed the possible forces resulting from such actions and found them inconsiderable.

Mr. LILLICK: Q. Professor Woods, until I asked you that question two or three minutes ago, had you heard before that at the time of this col-

(Testimony of Baldwin M. Woods.)

lision when the "Silver Palm" struck the "Chicago" for the second time, the engines on the "Chicago" were ordered one-third slow and that the vessel continued to back so that she backed away from the "Silver Palm" and that the "Chicago" pulled a short distance away and then stopped. Did you ever hear of that until I asked you about that a few moments ago?

A. Not in all of the details which you gave, but in substance.

Q. Then when you made this diagram, U. S. Exhibit 9-B you took [472] into consideration the fact that after the "Silver Palm" had come into contact with the "Chicago" and had rebounded, or recoiled and struck her again, that as that second rebound occurred the engines of the "Chicago" were put one-third slow, when they had therefore been going full speed emergency reverse, and that the "Chicago" pulled away from the "Silver Palm" and stopped in a somewhat parallel position?

A. I would like to have that read.

The COURT: Read the question.

(The question was repeated by the reporter.)

Mr. LILLICK: Q. Did you take that into consideration in making this diagram?

A. No. I should like to explain in this particular, that the diagram represents the actual position of the models. The factors such as additional forces due to propeller and engines back on the vessel were given consideration separately. It is not scientific laboratory practice to modify results of experi-

(Testimony of Baldwin M. Woods.)

ments in reporting them in diagrams that are submitted. The diagram should be an exact picture of what happened, and any modifications should come in interpretation.

Q. I am not sure that I understand you, Mr. Woods. In making tests of the character that you made in order to draw that diagram, do I understand that to come to a sound conclusion from the result shown by the diagram, you did not have to have scientific foundation as the basis for that?

A. On the contrary. One has to be confident that the conditions of the test, the model test, simulates conditions which he is attempting to picture.

Q. You were attempting to picture what occurred at sea at the time of this collision?

A. Yes.

Q. Mr. Woods, we have had testimony that the "Silver Palm," after puncturing the side of the "Chicago" came right along with her until the "Chicago" had swung 50 degrees to the right. In any of the tests did you so arrange them that the model you used for [473] the "Silver Palm" remained in and on the port bow of the model of the "Chicago" until that model had turned 50 degrees to the right?

A. May I consult my notes a moment?

Q. You are referring to data, Mr. Woods, from which you were asked to make this diagram. I am asking for your memory, first, please.

A. My recollection is that the point of contact remained approximately constant during the swing-

(Testimony of Baldwin M. Woods.)

ing of at least 35 degrees of the "Chicago". Toward the last ten or fifteen degrees of swing, roughly, of the 50 degrees I would not say that in the model tests the contact was maintained.

Q. How long did you maintain the contact between the two vessels in any of your tests?

A. I am obliged to answer that, I did not maintain it: that is to say I let the forces between the two ships to their own actions.

Q. Without consideration of any forces that either one or the other vessel had, independent of initial velocity?

A. In the test itself as exhibited here, the forces which were acting were those of impact of vessels moving as described. In the interpretation of them I have taken into consideration other forces, and as I said before, have found them inconsiderable in comparison with those forces. For example, if the penetration occupied a distance of 20 feet, or covered, I should prefer to say, a distance of 20 feet, and if the "Silver Palm" was proceeding at 10 knots—

Q. (Interrupting) You are now reading from your notes?

A. I am reading a computation that I made. I refer again to the kinetic energy diagram which I had yesterday. I found the kinetic energy of the "Silver Palm" at 10 knots to be roughly 130 million pounds. If the vessel penetrates 20 feet, and if one considers that it has uniform deceleration curves—the deceleration [474] probably was not uniform,

(Testimony of Baldwin M. Woods.)

but that is close enough, then the actual magnitude of the blow delivered was six and one half million pounds. That is the average magnitude, it might have varied as it struck, in cutting, and probably did, it probably rose to a magnitude considerably higher, perhaps higher than ten million pounds, and ending at zero. At the same time if the propellers were given full reverse on this vessel with 27,000 horse power available, which I assume for the moment, it would exert a force of about 150,000 pounds astern, it will act in a line to the center of the vessel.

Q. You are assuming are you, that you at that moment were reversing with that power?

A. Yes, for reverse.

Q. Moving through the water with that power?

A. Moving through the water with full reverse, but moving forward.

Q. But moving forward?

A. About six knots. Then the force of the propellers would act right along the axis and would exert no influence to turn the vessel; combined with the rudder they would exert an influence which would accentuate the effect of the rudder but the force of 150,000 pounds compared with a force of six and a half million is as an error of 2 per cent, and consequently in a model test of this sort, where the other errors are likely to be as great as two per cent, there would be nothing gained in attempting to simulate them.

(Testimony of Baldwin M. Woods.)

Q. Now, Mr. Woods, I understand that this diagram, United States Exhibit 9-B was made by you with the assumption that the "Silver Palm" remained in contact with the "Chicago" over 35 degrees angle?

A. That was a result, not an assumption.

Q. What do you mean by result and not an assumption?

A. In an experiment one controls certain variables, and the laws of nature provide the result. In this experiment the position and relative velocities of the models were the controlled variables, [475] and the things which happened were the results.

Q. So that your testimony now is that the "Chicago" was moved to the right for 35 degrees, during which time the "Silver Palm" remained in constant contact with her, and forcing her around?

A. Approximately, yes.

Q. Will you tell me what the factors were which you had with which to perform these experiments, the data?

A. Well, I had a great many data.

Q. That is what I want.

A. To which do you refer?

Q. I refer to all of the information which you had from which you performed the experiment leading up to the diagram which I have referred to, United States Exhibit 9-B.

(Testimony of Baldwin M. Woods.)

A. To begin with, I had general data concerning model tests and laws of dynamic similitude which are involved which I have accumulated over a period of about 18 years. I had specific data concerning the length and displacement approximately, of each of the vessels.

Q. Will you let me have that, please? If you have it in writing I will be glad to have that.

A. I have not it here. I think I can recall the salient items from memory. The length of the "Chicago" is approximately 600 feet. Its displacement slightly over 12,000 tons. The length of the "Silver Palm" I do not recall exactly, but remember it about on the order of 450 feet. I will be glad to be corrected if that is not exactly right. The displacement of the "Silver Palm" aside from cargo was something over 6000 tons, I believe 6300. I will have to look at my notes.

Q. Will you look at your notes, if you have them? What I want is the data that you used in performing the experiment.

A. Here is my information concerning the "Chicago".

Q. Will you pardon me. Did it come to you in the form of a letter?

A. Yes.

Q. May I see it?

A. It came to me in the form of a letter [476] from the United States Attorney, the last paragraph.

(Testimony of Baldwin M. Woods.)

Miss PHILLIPS: Just a moment. Counsel has asked me a number of questions whether the witness had any instructions. I gave the witness such instructions as he had, and I would be very glad to state them, or state them under oath, but I do not want to be in the position of being deprived the right to argue the case. If I am a witness I can not argue the case. If counsel wants to have me take the stand I would be glad to, but I do not want to lose the chance of arguing this case.

Mr. LILLICK: I will waive any such rule that there may be on my part.

Miss PHILLIPS: Shall I state what I told the witness, or have him tell you?

Mr. LILLICK: I would much prefer to have the witness state.

Miss PHILLIPS: Here is a letter about the displacement of the "Chicago," under my initials.

Mr. LILLICK: But what I desire to elicit from the witness is the number of tests, and I am going to follow that up.

Miss PHILLIPS: But the last question you asked the witness was what was his information about the "Chicago." He has now given you a letter that gives the information.

The COURT: Do you want what he actually took, or what his instructions were?

Mr. LILLICK: I am going to follow that up with what his instructions were.

The COURT: You are more anxious to know what his instructions than what he actually took?

(Testimony of Baldwin M. Woods.)

Miss PHILLIPS: The witness can answer only one question at a time, and which one does counsel want him to answer?

Mr. LILLICK: I have already asked him a question.

Miss PHILLIPS: You have asked him several questions, and I [477] do not believe he knows which one to answer.

Mr. LILLICK: I would like to have the question read, or perhaps it would be as well for me to ask another question. I want the displacement given you for the "Chicago."

A. 12,040 tons.

Q. When you were requested to make this test, Mr. Woods, was the request made by the United States Attorney in writing?

A. No. In conference.

Q. Then was some of the information upon which you based your test given to you orally?

A. I think one datum was given me.

Q. What was that datum?

A. The approximate length of the "Silver Palm."

Q. Then all of the other data involved in the test you made are in the form of letters to you?

A. All that I required in addition to the knowledge which I have of testing.

Q. May I have those instructions?

A. I have another letter.

Q. I want the data upon which you based your tests.

(Testimony of Baldwin M. Woods.)

Miss PHILLIPS: I am going to object to counsel's question on this ground, he does not make it specific enough to be intelligible. He is now getting from the witness the basis from which he assumed the "Chicago's" tonnage. Sometime ago he asked the basis of the "Silver Palm" tonnage. He is now asking for the general instructions. I want to point out that this witness is probably going to be called to testify in another part of the case. I think he should be specific in his question as to the instructions that he wants to know, not general instructions.

Mr. LILLICK: I am cross-examining this witness with a very definite purpose in view, and I have a right to have from the witness his instructions relative to the tests and the data he used in making them.

The COURT: That is pertaining to the testimony that he has given? [478]

Mr. LILLICK: I want from you, Mr. Woods the written instructions you had relative to the tests you were to make which were finally summed up in the diagrams about which I have just been asking you?

A. I was given—

Q. I am not asking you what they contained, I am asking you for them. May I have them?

Miss PHILLIPS: The witness has said part of the instructions were oral. Counsel is not letting the witness answer.

(Testimony of Baldwin M. Woods.)

The COURT: You are asking about the written instructions?

Mr. LILLICK: I am asking for the written instructions.

The COURT: He wants the written instructions.

A. I think I should explain to some degree what they are.

Mr. LILLICK: I will give you that opportunity.

The COURT: There is no objection to your explaining, if you wish, but he wants to see the writing.

A. I think there is a misconception concerning the test. I will be happy to hand over what I have in the way of instructions, but as far as the instructions go I have received none except to make such a test as was desired. In the way of information, I received information concerning the length and displacement of the two vessels, and a digest of testimony given by officers of the "Chicago" in the Naval Court hearing on the subject.

Mr. LILLICK: What I want to find out is that in order to be able to find out upon what you base this diagram.

Miss PHILLIPS: Which diagram are you referring to now?

Mr. LILLICK: Exhibits 9-A, 9-B, and the other two exhibits.

(Testimony of Baldwin M. Woods.)

A. Your Honor, I cannot swear that I include everything, because I cannot be certain, but I will be glad in case of an omission to supply it. As far as I now remember I am supply you with the information requested.

The COURT: He is only asking for the written instructions [479] and not the oral.

A. That is the other letter in addition to the one that was mentioned. This is Admiral Laning's digest, that is Captain Simons, Lieut.-Commander Gray, Second Class Seaman Demer, Ensign Leeds, Seaman Lemire. I do not certify that every one of these has something in it that applies to the test.

The COURT: It merely shows what they displayed to you?

A. Yes. I read all of this and from this material I set up the framework for the test. This is Lieut. Minter, Lieut.-Commander Colton, John A. Kershaw, chief engineer, and maybe the officers of the "Silver Palm," the depositions, I think I have an abstract of those. I am afraid I have not them here.

Mr. LILLICK: Q. How many tests did you make before you finally made the models that you were using come into the position shown on Government's Exhibit 9-B?

A. Do you mean how may trial passes or how many tests which I considered to simulate the conditions?

Q. How many trial passes?

(Testimony of Baldwin M. Woods.)

A. I don't remember. I should estimate two or three. The point is that I discarded every experiment which in my judgment did not give the conditions which I was trying to get, I did not record it. In every case where impact was observed at the angle and under the speed which I was attempting to get I recorded the results, or indicated that it was a check of previous results.

Q. How many times did you actually put the two models on opposite courses, with the "Silver Palm" on a course approximately 40 degrees off the "Chicago's" port bow and bring the vessels toward one another—how many times did you do that?

A. Bring the vessels to the position shown here?

Q. Bring the vessels toward each other.

A. You mean with the prows in opposite directions? [480]

Miss PHILLIPS: I do not believe I understand the question, and I would like to have counsel repeat it, because I don't know exactly what it is.

Mr. LILLICK: My question, it seems to me, is simplicity itself.

The COURT: He has stated there were about forty experiments. I presume there were a number of times he was not satisfied and he abandoned them. Are you asking for all of these, or the time they actually consummated the test?

Mr. LILLICK: I want to know how many times he tried the experiment.

The COURT: He has testified forty.

(Testimony of Baldwin M. Woods.)

Mr. LILLICK: But that was on direct examination yesterday, and I am going into it more fully.

The COURT: Of course, I want to understand the question, myself. As I understand it you are asking how many times the problem was actually worked upon by him, not how many times he started it and possibly did not consummate it, because he did not get the proper data.

Mr. LILLICK: Let me repeat the question: With the model of the "Chicago" in your tank and a model of the "Silver Palm" in your tank, on a course of approximately 40 degrees on the "Chicago's" port bow, how many times did you, before you made this diagram, commence to bring the "Silver Palm" toward the "Chicago," regardless of the speed, how many times did you do that?

A. I should estimate somewhere around forty. Of course, there were cases in which I did not get the impact under the simulated conditions and I did not record them.

Q. That is exactly what I am trying to elicit. I am trying to find out from you how many times did you do that, whether you discarded the result, or not, how many times did you start the [481] model of the "Silver Palm" going toward the "Chicago" on that course?

The COURT: Whether it impacted, or not?

Mr. LILLICK: Whether it impacted or not.

(Testimony of Baldwin M. Woods.)

A. It is hard to say, I suppose probably forty. When one is conducting experiments he tries to get valid data and proceeds until he gets what he considers a reasonable result, and to say that there were thirty-five or forty or sixty, it would be difficult. I should estimate forty.

The COURT: He is asking you other than that forty. Forty is where you had impacts between the two ships.

A. You mean counting all forms of impact or those which I kept a record of?

Q. He wants to know how many times it was other than the forty, whether you had impacts, or not.

A. Around forty.

Mr. LILLICK: Q. You have used the expression "valid results." What do you mean by that?

A. Whenever an experiment is undertaken, one makes certain basic assumptions. Among the conditions which might be called primary conditions, or which were controlling, if in the course of an experiment, due to any cause, one fails to get a combination which he assumed that he was working with then the results of that particular performance are invalid. This might result from one of many causes. If instruments are being used one might fail to operate. In this case if the impact was on the stern the experiment was not valid. If the impact was full abeam it was not valid. It was therefore neces-

(Testimony of Baldwin M. Woods.)

sary to control the experiments and consider only tests which met the conditions.

Mr. LILLICK: Q. So that you would say a valid result came when you managed to get the model of the "Silver Palm" impacting the port bow of the "Chicago" at an angle of 40 degrees? [482]

A. Yes, and the speeds were as when attempted for the particular test.

Q. How many times did you get the model of the "Silver Palm" to strike the port bow of the model of the "Chicago" at an angle of 40 degrees?

A. I could count them.

Miss PHILLIPS: Are you assuming now any particular speed of the "Chicago"?

Mr. LILLICK: May we have the question read, your Honor?

The COURT: Read the question.

(Last question repeated by the reporter.)

A. If I may include all cases of speed for the "Chicago," I have recorded nine cases, but when I stated forty a while ago I included perhaps ten or fifteen trials which took place before I recorded, which I regarded as ranging trials to gain control of the equipment.

Mr. LILLICK: Q. Let us take as a starting point the nine times that you were able to make the model of the "Silver Palm" strike the port bow of the model of the "Chicago" at approximately a forty-degree angle. At what different speeds dur-

(Testimony of Baldwin M. Woods.)

ing those nine times did you assume the "Chicago" to be making?

A. A speed at rest plus or minus approximately one knot, forward 6 knots, and astern 4 knots.

Q. So that in each instance you made three with the "Chicago" at rest, three with the "Chicago" at an estimated speed of six knots, and three at an estimated speed of four knots in reverse?

A. No, they were not evenly divided. The experiments which gave the result shown in this diagram—

Miss PHILLIPS: Let us have that in the record, what diagram?

A. 9-B. The results shown in this diagram 9-B follow five of the recorded trials, the "Chicago" having zero speed in all five. That, however, would include a slight variation, [483] perhaps as much as half or three-quarters of a knot forward or aft for the "Chicago." I might say in the non-recorded trials the results were completely harmonious with this record, but the recorded cases set down were typical.

Mr. LILLICK: Q. Why did you not record the others?

A. It is a matter of laboratory practice to record only enough data to give a satisfactory, to give a validated or repeated result.

Q. Will you explain to me how you obtained the speed of, was it, 1.7 feet per second?

(Testimony of Baldwin M. Woods.)

A. Yes, by reduction, ten knots; it should be remembered that a knot is 1.15 statute miles.

Q. Pardon me, may I interrupt you? I meant how did you do that, what was the physical operation, not the computation, but how did you physically make the model of the "Silver Palm" move through the water at that rate of speed?

A. Shall I describe the method which we discussed yesterday?

Q. Exactly. Let us take the size of the pool. What was the size of the pool?

A. The pool is about 160 feet long, irregular in shape. I am trying to think of something that simulated its form. It is narrower at the lower end and broader at the top end. It is about 60 or 75 feet wide at the top end.

Q. Is it a cement basin?

A. Yes.

Q. With cement steps around the sides?

A. I do not understand.

Q. Is there a cement wall around the sides of the pool?

A. Yes, there is a cement wall around it.

Q. At which end of the pool did you perform the experiment?

A. At the top end, the broad end.

Q. Its width was what?

A. I think 60 or 75 feet, I think nearer 75.

Q. Where did you perform the experiment, at a corner or at the end?

(Testimony of Baldwin M. Woods.)

A. There is no corner. The end is rounded, somewhat elliptical or circular in shape, semi-circular, and the models were [484] pushed out, manipulated with strings and rods—pushed out free of the edge, so as to avoid boundary effects. The models, of course, glide through the water; when you give it a little push it will move out twenty-three, or forty feet without difficulty, and then it may be started with a pull of the string and brought up to the speed.

Q. What happens to the string then?

A. The string then falls in the water.

Q. Falls in the water?

A. Yes.

Q. How long was the string that was used in the models?

A. About 20 feet, maybe 30. We had different strings.

Q. Who pulled the string?

A. I manipulated the "Chicago" and my assistant, Mr. Vogt the "Silver Palm," throughout.

Q. And when you pulled the string from the initial position out from the edge of the pool did you have to move around from the place where you were standing?

A. It was necessary in each case to get the proper alignment, and for that purpose we moved about quite a bit.

Q. How did you get a proper alignment for the 40 degrees approximate course?

(Testimony of Baldwin M. Woods.)

Miss PHILLIPS: If your Honor please, counsel says "course." The witness has been testifying to 40 degrees angle of impact. He has not testified to 40 degrees course.

Mr. LILLICK: Thank you, Miss Phillips.

Q. Bearing in mind what Miss Phillips has just stated, how did you get that?

A. The models are pushed out. The model of the "Silver Palm" was pushed out on the water until the length of the string had been used up; usually in order to avoid its starting back to us too promptly we slowed it down near the end, and then gently pulled it into the correct direction, and a pull was exerted and then an operation, similar operation, was performed with the "Chicago," estimating the probable location in [485] the degree of impact, so as to have the vessels arrive there simultaneously, and in the right relative positions. That required a certain amount of practice.

Q. Let us take a typical test that you made. Your assistant would be on one portion of this rounded pool?

A. Yes.

Q. And you on another?

A. Part of the time we were both together and other times apart.

Q. Let us take a typical example of what you did, when you had the "Chicago" model moving at the rate of speed of 6 knots an hour, and the "Silver Palm" at 12 knots, and tell me just what you did,

(Testimony of Baldwin M. Woods.)

where you stood, where your assistant stood, whether you handled the "Chicago," or whether he handled the "Chicago," and where the strings were used on the respective models, and give it to me definitely and in detail, as you would for a laboratory experiment; give it to me so that I could take it to another expert and show him the way it was tested and let me know the result.

A. Can I use the blackboard?

The COURT: You may if you want to.

Mr. LILLICK: I wonder if you could do it on a piece of paper so that we might have it in the record.

Miss PHILLIPS: I might say that counsel requested last night that the witness bring over his models, and they are in court. I presume counsel had some idea in that.

Mr. LILLICK: I will use them.

The COURT: Is that paper suitable?

A. Yes. This is the deep end of the pool. This line indicates roughly the walk, the cement walk running around it. The position at which we calibrated or determined or got the speed was along the side, where there are foot marks running for a number of feet, I have forgotten how many, certainly in excess of forty, because we used up to thirty of forty. [486]

Q. Might I ask you, Professor, to indicate on this one, because it will be part of the record, the foot marks, and by a legend designate it?

(Testimony of Baldwin M. Woods.)

A. I could on reasonably short notice obtain a diagram of this pool, if it is of particular significance, from the University. At this end there is a small step out here which overhangs the water, which proved quite convenient, it may have been used for diving off, I suppose.

Q. May we put "Deep end," please, there?

A. Yes. Ordinarily, in a typical test of the type which has just been mentioned, Mr. Vogt, my assistant, might stand here, and I would stand here. I wish it understood that this is a typical test, because we moved so as to have the collision occur at different places. The "Chicago" in such case would be drawn in this general direction. I would hold my hand out and pull it.

Q. Will you give us the distance between the point where you stood and where Mr. Vogt stood?

A. It varied so much that I would hesitate to give any distance as technical in one case. It might have been ten or fifteen feet, and in cases less.

Q. I have asked you for a typical example, and have understood this to be one. If you will, give me the approximate distance between where you and Mr. Vogt stood?

A. Say six to fifteen feet. Vogt would push this other vessel, the "Silver Palm," out into a position such as this and get an angle of about 40 degrees here, and would start this vessel on its course.

Q. May we put in the name of the vessel?

(Testimony of Baldwin M. Woods.)

A. Yes. We used a much longer string for the "Silver Palm" in order that it might be started on its course and could be observed before the "Chicago" was started, so as to control somewhat better, and have fewer mistrials, as it were.

Q. How long was the string from Vogt to the middle of the "Silver Palm"?

A. From 20 to 30 feet. [487]

Q. How long was the string from the "Chicago" to your extended arm?

A. That is in the case of the six knots?

Q. Yes.

A. Taking the 6 knots, it was somewhat longer than in the case at rest, because I wished to steady it, in case of 6 knots, I should say it was from 20 to 30, perhaps 25 feet.

Q. May we have on one of these the "Silver Palm" distance?

A. Yes. From 20 to 35 feet. This would be 6 to 15 feet.

Q. Did Mr. Vogt and you alone perform these experiments?

A. Yes.

Q. Who timed the models?

A. In the cases where we timed them I usually operated the stop watch.

Q. In how many cases did you time them?

A. We did not time them after we had found we were getting approximately the same speed time

(Testimony of Baldwin M. Woods.)

after time, except toward the end, when we timed one to make certain.

Q. With this example, I may be mistaken as to it, I understood that five of your nine typical tests—I am not sure that you called them typical.

A. Recorded.

Q. Recorded tests, were made with the “Chicago” going at 6 knots. Am I right about that?

A. No, at rest, approximately.

Q. How many tests did you make of the type that you are now describing with the “Chicago” at 6 knots?

A. We made only one recorded test. We made several more.

Q. By “several” you mean how many?

A. At least three.

Q. These results which you have given us in your diagram of the position of the “Chicago” going at 6 knots was, in all, after how many tests?

A. I do not understand.

Q. You a moment ago said that you had three tests, as I remember.

A. At least three.

Q. At least three?

A. Yes.

Q. So that you would say that the final result that you have here is that of but one test after your other three? [488]

A. But one recorded test.

(Testimony of Baldwin M. Woods.)

Q. But one recorded test?

A. And the non-recorded tests which were in agreement.

Q. And in that one recorded test, it is my understanding that U. S. Exhibit No. 11 is the result, is that so?

A. No, that is astern.

Q. Exhibit No. 10 gives the result?

A. Yes.

Q. And with that result you came to the conclusion from the four tests that the "Silver Palm" and the "Chicago" would not swing so that they would have their bows in the same direction?

A. Yes, we came to that conclusion. We considered it adequate.

Q. In other words, from the tests, U. S. Exhibit No. 10 demonstrates that with the collision between the "Silver Palm" and the "Chicago," with the "Chicago" proceeding ahead at six knots an hour, and the "Silver Palm" proceeding ahead at 12 knots an hour, and the "Silver Palm" striking the "Chicago's" bow at an angle of approximately 40 degrees, the "Silver Palm" would have sideswiped the "Chicago" and gone on aft of the "Chicago"?

A. Yes—I beg your pardon, not have gone aft; it would depend upon the amount of damage in the side-swiping.

Q. But in any event, with these speeds, and at that angle, the "Silver Palm" would not, after the

(Testimony of Baldwin M. Woods.)

collision, have had her stern swing around to her right as I have just indicated?

A. It would not.

Q. Can you tell me whether in considering what would have happened with relation to your experiments, and this diagram as it appears before us, you would have come to the same conclusion if you had known that the "Silver Palm" crashed into the "Chicago" for a distance of—I am not certain, Miss Phillips, 30 to 35 feet, is that a fair statement?

Miss PHILLIPS: I don't think that much. I would not be sure how much she crashed in. The ruler will show that, because [489] the scale is  $1/16$  of an inch. That is the reason I had this model made to scale, so that we could compute things like this.

Mr. GEARY: It is  $18/16$ ; it would be roughly 18 feet.

Mr. LILLICK: May I have my question read as far as I have gone?

The COURT: Read the question.

(The question was read by the reporter.)

Mr. LILLICK: (Continuing)—for a distance of 18 feet proceeding at 12 knots an hour?

A. I could not answer that question "Yes" because the diagram represents the result and not a conclusion. In other words, if I was to give my conclusion I would have to add to the result of the experiments as exhibited in the diagram, which is a true picture of the final position the effect of the

(Testimony of Baldwin M. Woods.)

glancing or side-swiping blow which was delivered. The effect of that side-swiping blow would have been evidenced first in the character of the damage done to both vessels; there should have been a severe shearing to the port side of the "Silver Palm," possibly taking the prow off, due simply to the fact that at the time of the impact that there was evidently a high tangential velocity at once; the acceleration there represented would be a measure of that tangential force which would tend to shear off the prow of the "Silver Palm" and would also tend to make a much longer gash, not a V gash, but a long gash in the side of the "Chicago."

Q. Do you know anything about the type of construction of the "Silver Palm" in her forepeak, with the shell plating, the timbers, the frames, and what the body of the "Silver Palm" is at her bow?

A. No more than is revealed by the photograph which I examined.

Q. And yet, with the examination you have made of this photograph, you would have said that in a collision between the [490] "Silver Palm" and the "Chicago," had the "Chicago" been going at a rate of 6 knots an hour, the "Silver Palm's" bow would have been sheared off if she had been coming at an angle of 40 degrees, approximately, or 45, with a speed of 12 knots an hour?

A. It would have been bent or crushed to port.

Q. But you said "sheared," Mr. Woods. What did you mean by that?

(Testimony of Baldwin M. Woods.)

A. When I answered that question, or a similar one, yesterday, I said either sheared off or bent strongly to port. The photographs examined showed no such damage.

Q. Did you have the shell plating of the "Chicago" in mind—did you know how thin her shell plating is and the condition of her frames?

A. Yes.

Q. Did you have that outside of the photograph?

A. I have not it in written form but I have seen it in written form.

Mr. LILLICK: We offer the drawing of the witness as our next exhibit.

The COURT: It will be received as Respondent's Exhibit 9.

(The drawing was marked "Respondent's Exhibit 9.")

Mr. LILLICK: Do I understand that U. S. Exhibit 9-B really represents the position into which your two models finally came to rest in the water at the conclusion of the test?

A. It represents the position to which they came at the close of the test, but not the position to which they might have drifted had they been left alone.

Q. What do you mean by "at the conclusion of the test"?

A. I mean that the effects of the impact had exerted their full influence.

Q. Wouldn't you say that was after they came to a position of rest?

(Testimony of Baldwin M. Woods.)

A. No. In conducting any experiment in fluid, nothing which you would place out on the fluid would stay at rest. You could put it at rest, but it won't stay there; consequently, one must observe up to the point where the drifting around of the [491] object begins to vitiate the result. That point is very definite.

Q. Did you take into consideration the wind at the time of the collision?

A. No. In the model tests there was no wind, at least by "no wind" I mean a movement of less than 50 feet a minute. That is the figure of the Society of Heating and Ventilating Engineers. In interpreting the result it is possible to consider the effect of wind. I have not given any consideration to it because of the relatively low value of the force.

Q. Mr. Woods, I asked you only whether you had considered the wind in connection with your experiment.

A. In the model test there was no wind.

Q. I think you said yesterday that a difference of between 15 and 20 per cent in the speed used by you with your model of the "Silver Palm" made no difference in the actual results.

A. None that we could discern.

Q. So that a difference of two knots an hour, we will say, in a 20-knot speed, would not alter, in your opinion, the result if a collision occurred between two ships?

(Testimony of Baldwin M. Woods.)

Miss PHILLIPS: Just a moment: Counsel is not stating what the witness has said.

Mr. LILLICK: I know I am not, I am asking a question.

Miss PHILLIPS: He has not said any such thing.

Mr. LILLICK: I know he has not, but he is an expert, and I have a right to state it in another way. May I have the question read?

The COURT: Read the question.

(Last question repeated by the reporter.)

Miss PHILLIPS: That is objected to as irrelevant. Nobody has testified that the "Silver Palm" hit the "Chicago" at a 20-knot speed. [492]

The COURT: The witness has not assumed that she hit the "Chicago" at 20 knots speed at any time in the experiment. If the 20-knot speed was used, could you answer?

A. I could only answer in regard to the energy involved.

Mr. LILLICK: Q. To put it differently, Mr. Woods, if I understand the distinction you are making, a difference of 15 and 20 per cent. in the speed used by you for the "Silver Palm" test might or might not be used for a lower speed?

A. I can only answer the question by describing or stating the results. The results of the test indicated that the final position assumed by the vessels was independent of the variation, that is, independent within the limits of ordinary errors of observa-

(Testimony of Baldwin M. Woods.)

tion, independent of variation of as much as between 15 and 20 per cent. variation in speed of the "Silver Palm."

Q. But I understood you to say between 15 and 20 per cent. Does the ratio of 15 to 20 per cent. used by you as to the speed in this experiment of 12 knots apply to the lower or higher rate of speed?

A. I could not say without computing the particular case.

Q. Upon what did you base the percentage of 15 or 20 per cent. that you used as to the variability giving the same result?

A. We based that upon the maximum variability of the speeds obtained by our simple method of pulling with the string.

Q. I think you testified to this yesterday, but I want to be sure it is in the record: The velocity that you measured in making this diagram was a velocity that you computed as being that of the "Silver Palm" at the moment of impact. Am I right about that?

A. Yes, to the best of my knowledge.

Q. Why do you say to the best of your knowledge?

A. Because I do not know the velocity of the "Silver Palm" at the moment of impact. I have taken an assumed velocity and a sufficiently [493] wide range to take care of velocities near that one in case that should not be correct.

(Testimony of Baldwin M. Woods.)

Q. What was that range of velocity?

A. The range was, as stated a few minutes ago, 15 or 20 per cent from 12 knots.

Q. So that your model of the "Silver Palm" struck the model of the "Chicago" at a rate of speed, relatively speaking, and I will use 20 per cent, of, say, 13.61 knots as the high speed—am I correct?

A. That is 14.40.

Q. I think I had better reframe the question, because it would be confusing. So that with the range of variability which you say would have made no appreciable difference in result, your experiment resulted, in your opinion, in having the model of the "Silver Palm" strike the model of the "Chicago" somewhere between a speed of 9.61 at low or 14.40 knots at high, using 20 per cent as an outside limit?

A. No, I meant by 20 per cent a general spread

Q. A general spread?

A. The spread which you have given is 40 per cent.

Q. Then it represents a difference in speed at the time of the impact of what? Will you give me the figures on that?

A. 12 knots less 10 per cent would be 10.8, and 12 knots plus 10, would be 13.2.

Q. You kept no tabulation of unsatisfactory tests, as I understand it.

A. No. We kept tabulations of every test that appeared to simulate the conditions and give anything significant.

(Testimony of Baldwin M. Woods.)

Q. And again that was the No. 5 with the "Chicago" from 1 to 2 knots?

A. Recorded 5.

Q. Recorded 5?

A. Yes.

Q. And with the "Chicago" going 6 knots per minute?

A. One recorded and at least three others.

Q. Did you ever conduct any tests in the testing pool at Washington?

A. No. [494]

Q. And do you remember how long that pool is?

A. Approximately, I think it is 400 feet long. I do not wish to have that interpreted too literally. I can get figures, but it is about 400 feet long.

Q. As a matter of fact, that is near enough to be right, but I think it is 500 feet. Approximately how wide is it?

A. I should judge it is 25 or 30 feet wide.

Q. How long were you there at the testing pool?

A. At Washington?

Q. Yes.

A. I merely visited the pool for a day on two occasions.

Q. You saw them making tests, did you not?

A. Yes, I was conducted through by one of the officers who was familiar with the testing and discussed the operation with him, a subject that I have studied from time to time.

(Testimony of Baldwin M. Woods.)

Q. The testing appliance there has a traveling carriage over the tank that runs the full length of the tank, has it not?

A. It has what I call a car.

Q. Operated by an electrical device?

A. Operated by electric motors.

Q. And in making a test, the model being tested is suspended from the center of this car or carriage, is it not?

A. It is allowed to float in the air, it is attached in an appropriate position giving freedom of vertical motion.

Q. But suspended over the center of this car?

A. By suspended, I connote always observing something that is floating, so I cannot say suspended, but attached.

Q. You explain it to me. There was a means provided for an absolutely accurate test of the speed with which the model was propelled through the water?

A. Yes.

Q. And that absolutely accurate test of speed was applied through the model being attached to this traveling carriage?

A. A dynamometer was used to measure the resistance offered. These tests [495] are not run, however, for the purpose for which we ran ours. They are run to determine the resistance, coefficient of effect of wave motion, effect of modification of form of ship lines, on various characteristics of the vessel. The art of model testing has reached a point

(Testimony of Baldwin M. Woods.)

now where tests are worth while if they will result in changes amounting to as little as 2 per cent. in power required for a given speed, and things of that sort. Consequently, for testing in which quantities have to be measured with that degree of accuracy the dynamometer system is employed. In the Washington pool unless there has been a recent change they have never used propellers on the models. They test them without and assume that the results are satisfactory. That is not entirely valid, but it is within narrow limits.

Q. In other words, there is a regular basis upon which they work out the bow coefficient and streamline for speed, and then by mathematical computation, knowing about the action of the propellers, they compute what that is, but the real valuable element is the change in the hull, isn't that true?

A. They test the result of many proposed modifications and ascertain whether the proposed changes are beneficial or otherwise.

Q. When were you there, Mr. Woods?

A. I think the last time was in the summer of 1929, and I think the time before was in the spring of 1928 or 1927.

Q. I may be mistaken, but in 1929 I feel that they did use propellers on their models.

Miss PHILLIPS: Just a moment: I don't think that should be stated.

Mr. LILLICK: It may go out of the record.

The COURT: It will be stricken out.

(Testimony of Baldwin M. Woods.)

Mr. LILLICK: Q. The pool in Washington, in fact all of these testing pools are covered, are they not—with a roof, I mean? [496]

A. The reason I hesitate is according to my recollection the latest one is not covered over its entire roof. The latest is the testing pool of the National Advising Committee for Aeronautics at Langley Field. They have one for testing at that field with a car that will make a speed of at least 50 miles per hour and a course of nearly 2500 feet.

Q. This is in the air that you are speaking of?

A. The National Advising Committee for Aeronautics has one which is perfectly adapted to test aeroplane floats or hydroplanes. It covers the widest range. It is at Langley Field. Such a length is not at all necessary.

Q. You mentioned rods, that you used rods in your experiments. What did you do with the rods?

A. A string does not resist compression and consequently when one wishes to hold the model some distance out, to avoid a boundary effect, a rod is used. If one holds it with a string he can keep it from drifting away, but not from drifting toward him. With a rod he can prevent that.

Q. Were you each armed with a rod in this test?

A. Yes.

Q. So that if the model moved, either from the wind or even a slight motion in the water, you could push it back with your other hand?

A. Well, that was not possible for Mr. Vogt with the "Silver Palm," which was further away,

(Testimony of Baldwin M. Woods.)

and in fact it was soon discovered that if one used a stick that was enough. One could construe the position and then one with the stick could start the controlling moments when he got the conditions right.

Q. Let us take the model that we have here, of the "Chicago," is it?

A. Yes, that represents the "Chicago."

Q. In order to cut her away, what did you do with respect to apparently the superstructure?

A. This model happens to have been prepared sometime ago for some rolling and pitching tests [497] of vessels, and it has some equipment on it we left on at the time of the test, because it had no particular influence on the operation of the vessel. We weighed it, and this upper portion of metal which you see was not built at that time. It had been on for some time.

Q. But in any event, the model as it is here before us is that model that you used to represent the "Chicago"?

A. Yes.

Q. And you put weight inside of this space?

A. My recollection is that the "Chicago" did not need any weight, but that the "Silver Palm" did. In other words, our only concern was to get a ratio of about 13 to 12 in weight. It did not make any difference as to which one we applied the weight.

Q. Are you sure of that? You say you do not

(Testimony of Baldwin M. Woods.)

recollect. I would like to know whether you put anything in this to make it weigh more than it apparently weighs now. Will you look at your notes?

A. My notes do not say. They tell me the total weight, however, which would make it very easy to determine. The "Chicago" weighed 8.9, as we tested it. I think nothing was put in it.

Q. Did you take into consideration the draft that you obtained from the information that was sent to you by the United States District Attorney?

A. In the test?

Q. Yes.

A. We considered the models to have sufficient draft to make accurate analysis unnecessary.

Q. And to put it differently, with the models you used you assumed draft would make no difference?

A. Correct.

Q. Can you tell me whether you took the same position with respect to the pivoting point on the "Silver Palm", and on the "Chicago"?

A. Yes.

Q. In other words, you felt that regardless of how the "Silver Palm" might be loaded with this 8000 odd tons of cargo, or 7000—what was it? [498]

Miss PHILLIPS: The master did not seem to know. He testified between 6000 and 8000, I think.

Mr. LILLICK: Q. Between 6000 and 8000, to correct that, that the pivoting point would make no difference?

A. We assumed that the change in the position of the pivoting point occasioned by the cargo would

(Testimony of Baldwin M. Woods.)

not bring it substantially away from the position of the pivoting point of the model.

Q. And yet you know nothing about how the "Silver Palm" was stowed?

A. Except from a picture taken, reputed to be taken just after the accident showing the stove-in front end which showed an exposed portion of the water line.

Q. Any cargo showing through the opening?

A. No, but the trim of the "Silver Palm" was shown.

Q. Did you know the "Silver Palm" is a vessel with refrigerating compartments?

A. No.

The COURT: We will take a recess now until 2 o'clock.

(At this time a recess was taken until 2 o'clock p.m.) [499]

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### Afternoon Session.

BALDWIN M. WOODS

recalled

### Cross Examination Resumed.

Mr. LILLICK: Q. Mr. Woods, just before recess I think we were discussing the model which was used of the "Chicago". I understand you have forgotten whether you used any weights in the hull when you made this test.

A. I think that I could verify the fact if I might examine it a minute. The weight of the model is on

(Testimony of Baldwin M. Woods.)

it somewhere, but I have forgotten just where it is. It is my recollection that there were no weights in it. I would say this, that I have no doubt that my assistants could find the weight on it.

Q. Now you will notice what are apparently weights attached to movable rods. Do you know whether you used the model in that loose condition?

A. They were tight at that time. This model has been in use for other purposes. These weights are to be used for varying the metacentric of the vessel and conduct certain rolling and pitching tests by our students, advanced students.

Q. And your recollection is that these weights on the sliding bar which is intended to be raised and lowered were in the position where they were down low in the hull?

A. In the approximate position as at present.

Q. When you performed these tests were the little cleats on the bottom of the model?

A. Yes.

Q. Take that first cleat and figure it from the dimensions of the vessel itself, what would you say the width and depth of that cleat would have been on the "Chicago" had her bottom had three sets of cleats?

A. I can answer that from two points of view, one from the dimensions as given here, or from the point of view of the effect.

Q. I am asking you only for the dimensions.

(Testimony of Baldwin M. Woods.)

A. I will have to have a ruler.

Q. You have a ruler.

A. About twelve feet long and about six feet projection.

Q. So that on the model as it represents the "Chicago" in other respects, there would have been cleats, or what do they call them on yachts when they go down and come up?

A. I don't remember. I don't remember the terminology. Are you interested in the purpose of these cleats?

Q. I am only asking the question and trying to identify what these would be on a flat bottomed boat, and when we pulled that up—Is that a center board?

A. Center board.

Q. So that on this model there were three what are called center boards that, by your calculation on the "Chicago" would have been twelve feet long and six feet deep?

A. Yes.

Q. As to the bow of your model, the one we are examining, you do not claim, do you, that it is a bow that could be deemed to have been a duplicate of the bow of the "Chicago"?

A. For the purposes of the tests, yes.

Q. How about the stern, would you say that for the purposes of the test we could take the stern of this model as being similar to the stern of the "Chicago"?

A. Yes.

(Testimony of Baldwin M. Woods.)

Q. I call your attention to the model of the "Chicago" that has been introduced in evidence, and the manner in which her stern is cut away flat and up. Is it your testimony that with the rudder of the "Chicago" as indicated upon the exhibit which has been introduced in evidence, that with that flat cutaway stern it would have resulted in the same action on the "Chicago" as in your experiment it resulted from the manner in which the stern of this model is cut away?

A. Practically, yes.

Q. Your relative measures involved, as I understood you yesterday, are a scale of 1 to 150: Is that right?

A. Yes. [501]

Q. Is it not true that any error made by you in your tests would be magnified 150 times?

A. There is no relation at all between that measure in that test that you have spoken of. There are many relations. They depend upon the theory of dynamic similitude which is the basis of a model test, and the ratio of one quantity, on the full scale of the prototype, to the corresponding model in the model, varies according to the physical quantity considered. For example resistance may vary according to the amount of the ratio, the power according to another, and so on; it is the rate of variation of these quantities that determines the effect of error.

Q. What did you mean yesterday by a 1 to 150 comparison?

(Testimony of Baldwin M. Woods.)

A. I mentioned the scale ratio of 1 to 150 as a basis for determining the speed for the models which would correspond in its dynamic effect to a given speed for the ship.

Q. Perhaps I am only half way correct. The relation of 1 to 150 applied, then, only to the kinetic energy and not the distance between the ships?

A. No. When you refer to ships, their dimensions, there is a geometric pattern. When one uses a model at a scale ratio of 1 to 150, let us say the model is 1/150 in length of the prototype, he sets the new pattern so that it would resemble a reduced photograph of the large pattern, in which everything shrinks by the rate of 150 to 1.

Q. Then if, in the reduced photograph there is an error in your denominator of 1, it will be magnified 150 times, would it not, if there be an error?

A. Errors are considered in terms of percentage. An error of 1 in a length of 4 feet would correspond to an error of 150 in a length of 600 feet.

Q. I am a layman, Professor Woods, and I am trying to understand what difference would be made in a mistake or an error made with a model of the type we are discussing. Will you explain [502] that to me?

A. The subject of errors is a very complex one. I can give you an example, however. In a test on ship models in which they have varied the ratio between draft and beam, if the draft be the numerator and the beam the denominator, from the value approximately of 1 to a value of 4 for giving varia-

(Testimony of Baldwin M. Woods.)

tions in the total power required to propel the ship of about 6 per cent. For a ratio of 1, the beam and the draft are equal, and that typifies a narrow ship. For a ratio of 4 you have a very wide, flat ship, the beam is four times the draft. With that wide variation which covers nearly all types of ships, the total variation in power for the same speed and the same displacement is about 6 per cent.

Q. Now going back to 1 to 150. This model, as I understand it, is 150 times smaller than the "Chicago" insofar as length is concerned?

A. Yes.

Q. By the use of this model you could by pulling the string sufficiently strong attain a speed in split seconds by the use of this model, that multiplied by 150 would run into, let us say, a very rough estimate, for another 200 knots an hour, could it not?

A. By pulling enough, yes.

Q. Then coming back to the question I asked you, wouldn't an error made in the use of this model 150 times smaller than the "Chicago", if reflected in the ship itself, be magnified by 150 times?

A. No. The percentage of error may not be modified at all between the two cases. The main advantage of the model is that very frequently it is possible to measure quantities which, for the prototype could not be measured. The accuracy of measurement for the model can frequently be made far greater than that for the prototype, for certain purposes, and therefore one actually gets greater ac-

(Testimony of Baldwin M. Woods.)

curacy for determination with the model than with [503] the prototype.

Q. Then putting it the other way, it is your testimony that an error made by the use of a model would not be magnified 150 times?

A. No.

Miss PHILLIPS: I think I will have to object. That is the third time counsel has asked that question in the last five minutes.

Mr. LILLICK: I am asking it another time.

The COURT: Of course he has answered twice in this way, as I understand it, that it is a matter of percentages and not a matter of multiplication. That is correct is it not?

A. Yes.

Q. The percentages remain the same?

A. The percentage could very well remain the same, and does in many cases.

Mr. LILLICK: Q. Would you say that it did in this case, bearing in mind that your model has no superstructure, has no comparable features in reference to the "Chicago" in the way of draft, in the way of coefficient at the bow, or in cutaway at the stern?

A. It is my estimate that a rough piece of lumber slightly faired at the end, say of the dimensions 2 by 8 which would float in the water vertically would have given substantially, within a moderate percentage of error, the same result as the present model.

(Testimony of Baldwin M. Woods.)

Q. Then the use of the present model in the test—the test could just as well be made, in your opinion, if it was made with a piece of wood, as you have described?

Miss PHILLIPS: Just a moment; counsel's question is now so general that it is not intelligible, the use of the model in what test, for what purpose? He should make the question more specific.

Mr. LILLICK: I will try to make it specific.

Q. Then taking your testimony, do you say that the tests in the [504] basin at Washington for the purpose of computing speed, might just as well be made with blocks of wood as with a finely-drawn model?

A. No.

Q. Then you did not mean a few minutes ago, that a block of wood of the same shape as the "Chicago" as to length, could be used to compute the speed of the "Chicago"?

A. No.

Miss PHILLIPS: And the witness did not say so.

Mr. LILLICK: Q. When you were making these tests at the pool over in Berkeley, did you notice whether the model of the "Silver Palm" as it approached the "Chicago", when the "Chicago" was moved at an estimated speed of six knots an hour, had any tendency whatever to turn just before the two came in contact?

A. I did note in all of the cases that there was no appreciable tendency to turn as the model repre-

(Testimony of Baldwin M. Woods.)

senting the "Silver Palm" approached the "Chicago" in the model test.

Q. What would have been the effect had the model of the "Chicago" been only a blunt piece of wood?

A. For the analysis of the impact the relative position and mass at the time of impact,—the relative position of the masses at the time of impact, and the velocities are determining factors. Had the model of the "Silver Palm" been a slightly faired piece of wood as I have described a moment ago approaching the "Chicago", the result would not have been materially different.

Q. Were your tests intended to demonstrate particularly the kinetic energy involved in the impact?

A. No.

Q. What were they intended to result in, then?

A. They were intended to ascertain what positions the vessels would assume after the impact, under a variety of initial conditions of speed, with the maintenance of a fixed point of impact, and a constant angle of approach.

Q. In the approach of the "Silver Palm" to the "Chicago" with [505] these models, is your initial velocity greater than that at the time of the impact?

A. In nearly every case it is.

Q. As you cover the 15 feet—I think you said 15 feet.

A. Or more.

(Testimony of Baldwin M. Woods.)

Q. The 15 feet or more, in covering that 15 feet with your model of the "Silver Palm" is it my understanding that you give it the initial pull and then permit the speed to decrease or increase? What do you do?

A. To decrease.

Q. To decrease?

A. Yes, and in a few cases we maintained a pressure to keep the speed about constant until we were close to the point of impact.

Q. Did these experiments turn out with a satisfactory result?

A. I should have to define "satisfactory". If you mean that we obtained the attempted initial condition and obtained an impact at an angle of 40 degrees with the speed which we had attempted, I should call that a satisfactory experiment. The results take care of themselves. The results were not different.

Q. Did you measure the velocity once you finally obtained 12 knots an hour at any other point between your commencement of the movement of the "Silver Palm" and the final impact?

A. We did not measure it. We had practiced obtaining approximately 1.7 feet per second which corresponds to 12 knots, and were able to give the vessel that velocity. It did not diminish materially from that value.

Q. In other words, you practiced for a time on pulling the model of the "Silver Palm" through

(Testimony of Baldwin M. Woods.)

the water, and timed it before you finally performed the test?

A. Yes.

Q. How many times did you do that?

A. Three or four times.

Q. I notice a little red string at the ring bolt attached to what I think you mean to be the bow of the "Chicago"?

A. Yes.

Q. That was the type of string you used?

A. Yes, I have a further sample. [506]

Q. This is the type of string that was dropped in the water?

A. Yes. It was probably one of those used. It was picked out of the boat this morning.

Q. I understood you to say this morning that actions of the rudder would have made no difference in your test?

A. No.

Q. With regard to whether the "Silver Palm" was proceeding at a rate of 12 knots an hour at the time of the impact and had been on a hard right rudder for a half or three-quarters of a minute or a minute before that?

A. It would make no difference. The conditions at the point of impact would have been modified had either vessel been turning materially. Therefore the conditions at the point of impact were assumed to begin with and the vessels brought together under those conditions.

(Testimony of Baldwin M. Woods.)

Q. What was the condition that you assumed at the time of impact?

A. Between 10 and 12 knots of speed for the "Silver Palm" at an angle of 40 degrees between the major axes of the two vessels.

Q. Without regard to the rudder?

A. Without regard to the rudder.

Q. Now in the test that resulted in the diagram, Exhibit 9-B would you say that if the model used by you for the "Silver Palm" had two propellers like those on the "Silver Palm" and the model used by you for the "Chicago" had four propellers like those on the "Chicago" the results obtained by you would have been the same even if those propellers had not been turning?

A. Yes.

Q. And if all of those propellers had been turning the result would have been the same?

A. The result would have been the same. Had all the propellers been turning and had the rudders been placed to a straight position, the result would have been modified by not to exceed two per cent.

Q. If the propellers on the "Chicago" were reversing full speed astern and the propellers on the "Silver Palm" at the time of [507] impact had been started ahead, still there would have been no difference in the result except for that percentage?

A. No, no difference.

Q. I asked you about the "Silver Palm" remaining in the gash after the collision, or until the "Chicago" had been swung over an arc of 50 degrees;

(Testimony of Baldwin M. Woods.)

is your answer now that the propellers on the "Chicago" going at full speed astern and the propellers on the "Silver Palm" just starting ahead, after that joining of the two ships, would have made no more than two per cent difference?

A. Will you repeat that?

The COURT: Read the question.

(The last question was repeated by the reporter.)

A. That is correct.

Mr. LILLICK: Do you have any opinion whatever as to the trim of the "Silver Palm"?

A. Only that from an inspection of the small photograph which I saw.

Q. Was that after the collision?

A. Yes.

Q. Was it while she was lying at the dock at San Francisco?

A. No.

Q. Where was she at this time?

A. If I recall correctly it was reported to have been taken within an hour or two of the collision as the "Silver Palm" was at sea.

Miss PHILLIPS: Might I state for counsel's benefit, I think he can get the picture because I gave it to the witness. It was printed in the San Francisco Chronicle the day following the collision, a picture taken showing the "Silver Palm" with her crushed bow, taken at sea. I have not a copy of the photograph, but counsel I am sure can find it reproduced in the Chronicle. I say the Chronicle, it may be the Examiner, but I am not sure.

(Testimony of Baldwin M. Woods.)

Mr. LILLICK: Q. So that you were assuming, for the purpose of your test, the trim that you saw in that picture?

A. I do not recall that I saw the picture before the test, but I [508] believe so, but the conditions in the test would cover a fairly wide range of the trim.

Q. Would the conditions in the test cover the situation where the difference between the trim you saw in that picture with the forward part of the "Silver Palm" deep in the water because of the cut, make any difference with respect to what she was before?

A. The picture which I saw did not show the prow deep in the water, but in answer to the question I will have to explain by making the comment, I would say that the variation between a vessel deep in the water and one with the prow apparently up, would not affect the results of the model test.

Q. Will a shallow draft vessel turn in the water any more rapidly than a deep draft vessel?

A. It goes back to the design of the rudder. For the same capacity of rudder the shallow vessel will often turn more rapidly than a deep draft vessel.

Q. Then, in your opinion, it would make no difference as to the water drying depth of the "Chicago" and the "Silver Palm" insofar as your models were concerned?

A. No.

Q. The model that I hold in my hand is the model that you used for the "Silver Palm" is it?

A. Yes.

(Testimony of Baldwin M. Woods.)

Q. Can you tell me what the name "Golden boats" means on the model?

A. That means that it is a true model of the lower portion of the Golden boats of the ferry.

Q. You mean the Golden Gate Ferry?

A. I don't know that they are all operated by the Golden Gate Ferry.

Q. I call your attention to what apparently is a false keel on this model and ask you again, with the ruler, to tell me what relation to the 1 to 150, how deep such a boat's keel would have been on the "Silver Palm".

A. Three feet.

Q. Extending the entire length of the model?

A. Yes.

Q. Is it your opinion that with this false keel, had it been on [509] the "Silver Palm" at the time of the collision, had no effect whatever on her turning qualities?

A. It would have had effect on her turning qualities but not the effect perceptible in arranging model tests for the purpose for which these tests were made.

Q. Was the only purpose for which this test was made to determine whether the impact of these two vessels would necessarily result in bringing the two together on almost parallel lines without any other factors than the force of the blow from the "Silver Palm" to the "Chicago"?

A. The purpose of the test was to determine what the resulting positions would be under the special conditions assumed.

(Testimony of Baldwin M. Woods.)

Q. Have you had any practical experience, Mr. Woods, with what happens to two steel vessels when they come in contact at sea?

A. Two steel ships?

A. No.

Q. Have you ever acted as surveyor with respect to the type of damage caused in such a collision?

A. No.

Q. Have you ever seen a vessel other than the "Chicago" that had been in a collision at sea?

A. I find it difficult to remember. I have examined pictures and I have been around the docks, but I do not for the moment recall any.

Q. Have you ever heard that when two vessels of the approximate size of the "Silver Palm" and the "Chicago", and we will assume one of 13,000 tons and the other 12,000 tons, came within a certain distance of each other, that some force brings them together?

A. Yes.

Q. What distance would those two vessels come together in, if they were at rest in the water, vessels of 12,000 and 13,000 tons?

A. That would require a rather careful computation.

Q. I only want an approximation.

A. I would not give any.

Q. What would happen when, they were, say within 25 feet of one another and a swell came along? [510]

(Testimony of Baldwin M. Woods.)

A. It would depend upon the direction and magnitude of the swell as to their position. I have never computed such a case nor conducted any experiments to determine it.

Q. Would it have any effect with reference to a vessel approaching another at an angle of 45 degrees with a swell coming in the angle between the 45 degrees and a line projected from the stem of the other vessel, in reference to side-swiping, in your opinion?

A. It would have very little effect because the thrust involved would rest large upon the surface of the water, whereas the resistance to a sudden turn lies with the under surface of the hull.

Q. I understand there was no one with Mr. Vogt and yourself when these tests were made?

A. No.

Q. You testified, as I understand it, that an observer on the "Chicago", assuming the vessel was going astern, would see increasingly more of the starboard side of the "Silver Palm" and would accordingly gain the impression that the "Silver Palm" was swinging to port. Now if the bearing of the "Silver Palm" remained constant 45 degrees approximately, the angle formed by the courses of the two ships would remain constant, would it not?

A. The angle formed by the courses, yes.

Q. All of the other angles of that triangle would also remain constant, would they not?

A. Which triangle?

Q. Made by the course of the "Silver Palm" of 45 degrees crossing the course of the "Chicago" in that fashion.

(Testimony of Baldwin M. Woods.)

A. What is the third side of the triangle?

Q. The third side is the line of view of the observer.

A. If we picture an observer on the axis of the "Chicago" aft of the point of contact and observing the same point on the "Silver Palm", is that correct?

Q. That is right.

A. As the "Silver Palm" comes in, there were two angles of the triangle continually changing for an observer [511] aft the point of intersection of the course line.

Q. You would say he would see more of the starboard side of the "Silver Palm" as they came together?

A. Provided the "Chicago" were going astern.

Q. But only provided that the "Chicago" was going astern?

A. Or provided the "Silver Palm" was turning slightly to port.

Q. Or providing the "Chicago" bodily listed to the right, that is true, is it not?

A. Yes.

Q. In the use of your models no one gave you any data with respect to the vessels themselves other than their length and breadth and depth, did they?

A. And tonnage. I should perhaps say I saw pictures of them which would of themselves give considerable additional information as to the material used in their construction and the character of it.

(Testimony of Baldwin M. Woods.)

Q. I did not get definitely in my mind, Mr. Woods, for what purpose you used the rods that you used in the tests.

Miss PHILLIPS: Your Honor, I am going to object to that. The witness described that specifically and fully this morning. Counsel is now retracing what he has already covered on cross examination. The question has been asked and answered.

Mr. LILLICK: I have no recollection of his testimony with respect to the rod, other than there was a rod upon that test. I want that cleared up. That is the only point I have in mind at all.

The COURT: I think he said the only use of the rod was to keep the model from approaching, that the one who had the string could not control it. That was the only use.

A. That was the only use of the rod.

Mr. LILLICK: Q. And that the two models were held at the end of that rod until motion was actually started: Is that what you mean?

A. The rod was used for the "Chicago" and in most cases none was used for the "Silver Palm". The rod was used to hold [512] the Chicago out at a distance and also hold it until it was right straight in line.

Q. On a given course?

A. On a given course. No rod was in contact with it at the time of impact.

Q. You paid no attention whether one vessel or the other had a foul bottom, did you, in the model test?

(Testimony of Baldwin M. Woods.)

A. It was not necesasry, since the speeds were obtained without reference to foul bottom.

Q. And you think the turning result would have been the same, too, do you?

A. Yes.

Q. Can you tell me the interval of time that elapsed between the impact and until the two models that you were using came into the position shown on U. S. Exhibit 9-B?

A. I did not record the time. I should estimate it at a few seconds, on the order of one to three seconds.

Q. What did that mean in time in comparing your 1 to 150 of the difference between the models and the vessels themselves?

A. Off hand I could not answer that, I would have to compute it. The time ratios in tests of this sort are also a function of the model ratios and for the purpose of this test I did not compute them and do not recall.

Q. So that there may be no misunderstanding about it, Mr. Woods, you did not take into consideration, when that last diagram was prepared, that the engines of the "Chicago" were going astern and she backed away from the "Silver Palm"?

A. In conducting your experiments and recording the results, no account was taken, but numerous times in the discussion yesterday and today I have taken account of it in the allowance made.

Q. But you can not give me the time now that I asked you for, give the interval between the impact and when your models fell in that position?

(Testimony of Baldwin M. Woods.)

A. No. The important thing was not the time, but the fact that the results of the impact had been [513] approximately reached.

Q. On the models, without regard to engine action, and maneuvers of the two vessels when the collision occurred?

A. That is to say, the diagram as presented did not include such action.

Q. In your test did you give any consideration to the fact that from the time of the sighting of the "Silver Palm" it traveled 450 yards and the "Chicago" had traveled 250 yards to the point of collision?

Miss PHILLIPS: Just a moment; I object to that. In the first place, counsel is assuming two points there that I do not think have been proved, one of them possibly has, but certainly the other has not, that is to say, the "Silver Palm" had traveled that distance, and in the second place the amount which the vessel moved, the conditions are not included as part of the question.

The COURT: He has testified that the only thing he tried to prove was the angle of impact and the speed at that time.

Mr. LILLICK: The reason I asked that question is because the witness stated that he had handed to him a statement of the different officers, and they were a part of the background for the data from which he made the tests.

The COURT: I was thinking of what his own statements were of what he actually did, that he

(Testimony of Baldwin M. Woods.)

actually tried to duplicate the situation. He has several times in the record said it was not a matter of distance, it was a matter of bringing the two vessels together at the proper angle with the alleged speed.

Mr. LILLICK: I think that is true. We offer in evidence the statements furnished Mr. Woods by the United States District Attorney for his tests, and we also offer in evidence the two models as to which he has testified.

Miss PHILLIPS: I am going to object to the offer in evidence of the two models. The witness has testified that these models [514] are used by the University in its classes, and belong to the University of California. I think if counsel wants models introduced like this, he should have duplicates prepared at his own expense and put them in. He has not any right to take from people property and use it for that purpose. I have not the slightest objection to his having duplicates made, but I do not believe that he has a right to offer in evidence in this case the property of the university used by it. I have no doubt that the models could be borrowed, but I do not believe we have a right to take somebody else's property.

The COURT: What do you intend to do? Is it because you wish to use these is some test of your own, or is it because you simply want the court to see the models in connection with the testimony given?

(Testimony of Baldwin M. Woods.)

Mr. LILLICK: It was only that, in the event of an oral argument or in the event that we might need them here elsewhere, they might be subject to our being able to get them. I would have been glad to have interrupted Miss Phillips to say that I think we might perhaps have a right to insist upon their being put in evidence. I would neither wish to inconvenience the University by taking them away from it, and if Mr. Woods will be kind enough, if the occasion arises to say that we may use them if we wish to, for a day or two, and we may send for them, I will be quite satisfied with it.

The WITNESS: It will be a pleasure to do it.

The COURT: They will be available for the purposes of this case?

A. It happens that certain experiments are in progress by graduate students that call for their use when they are not urgently needed.

Q. But for the purpose of the argument or possible experiment for a brief period, they would be available for the use of the court? [515]

A. The first call would be to the court.

The COURT: I presume the only thing that is being offered, then, is the records which were used by the witness prior to making the experiments, and they will be marked Respondent's Exhibit No. 10 in evidence.

(The documents were marked "Respondent's Exhibit No. 10")

(Testimony of Baldwin M. Woods.)

Redirect Examination.

Miss PHILLIPS: I have a few questions, Professor Woods, counsel put this question to you yesterday afternoon and again made reference to it just a few minutes ago, that if the "Chicago" had been bodily coming over to the left, what would be the impression of one on the "Chicago" as to an apparent change of course by the "Silver Palm"? Does the position of the observer on the "Chicago" make any difference?

A. Yes, it does. The impression to one near the turning point of the ship would be quite different from the impression gained by one, let us say, considerably astern; in fact there would be a definite change in impression as one moves aft from the turning point.

Q. The expression "'Chicago' moving bodily over to the left", let us take the model. Which part of the "Chicago" is going to move bodily to the left if she is executing a right turn? I wish you would illustrate to his Honor.

A. On a left rudder, a turn to the left?

Q. A turn to the right. What rudder to the ship would move it bodily to the left, with the ship turning right?

A. When right rudder is applied to execute a turn to the right, the vessel may actually for a moment turn slowly to the port. The turning center follows almost the course which has been followed heretofore, describing a curve which gradually de-

(Testimony of Baldwin M. Woods.)

creasing turns to the right. The vessel itself swings about the turning center so that the after portion is out in this position, even [516] though the vessel is still moving; somewhat in that direction. It then gradually acquires momentum to turn, following the path.

Q. The bodily movement to the left then, occurs in what part of the ship?

A. The bodily movement to the left occurs aft of the turning center.

Q. Aft of the turning center?

A. Yes.

Q. Now if the "Chicago" was in fact moving ahead at a speed, let us say, in excess of two knots, even if she would turn to the right, could one on the "Chicago" forward of the pivoting point, but aft of the point of impact, could that person get an impression that the "Silver Palm" was turning left, or that she was not turning left?

Mr. LILLICK: I object to that as calling for the pure conclusion of the witness on a subject as to which the witness apparently has not any special knowledge.

The COURT: Do you feel that you are in a position to answer that question?

A. Yes.

Q. All right, proceed.

A. Would you repeat the question?

Miss PHILLIPS: What I am getting at is, if the "Chicago" were moving ahead at a speed in excess of two knots, turning right, would a person, say on the bridge of the "Chicago" forward of the pivoting point—could he get an impression that the

(Testimony of Baldwin M. Woods.)

“Silver Palm” was turning left even though she were not turning left?

Mr. LILLICK: I think that is pure opinion of the witness.

Miss PHILLIPS: Absolutely.

Mr. LILLICK: There is no foundation laid and I would like to have a foundation laid for it.

Miss PHILLIPS: It is absolutely opinion evidence. The witness has said that this is one of his particular fields of research. [517]

Mr. LILLICK: If your Honor please, this is a question of navigation, and what could be seen at sea by an observer.

The COURT: It is theoretically an optical illusion. Have you observed that situation and do you know?

A. Might I say in explanation, the apparent motion and direction in which the oncoming vessel “Silver Palm” would appear to be turning, depends upon whether the observer, considering him fixed on whatever station, the axis has not been stated—but whatever station he is on it depends whether the observer is seeing an increased portion of her left side or a smaller portion. If he sees a small portion he gets the impression that the other vessel, the “Silver Palm” is turning to starboard; if he sees an increasing portion he gets the impression of her turning to port. Under the conditions specified in the question, although I should have to verify them a little geometrically, it is my belief that the witness would not gain the impression that the “Silver Palm” was turning to port.

(Testimony of Baldwin M. Woods.)

Miss PHILLIPS: Q. My question was, unless she were in fact turning to port.

A. Unless she were in fact turning.

Q. Now I do not want to cover in detail too much of what counsel covered on cross examination, but I want to be sure that the results are before the court. You told counsel you were unable, with your models, to use a right rudder on the "Chicago" in the tests you made.

Mr. LILLICK: I object to your putting a leading question to the witness, and that is very leading.

Miss PHILLIPS: I have tried to sum up what the witness has said preparatory to asking another question.

Mr. LILLICK: Yet counsel is bound, I think, to ask questions that are not leading. [518]

The COURT: I think the question has been asked by you and he has answered it.

Miss PHILLIPS: I will withdraw it. What I am trying to get at is this. I thought I would shorten time on this. Why did you state to counsel that your inability to get the effect of a right rudder on the "Chicago" or her engines moving astern,—why did you say that was of no importance?

A. I said that was of no consequence in the test because of the relative magnitude of the thrust. The average blow, as I said this morning, the average strength of the blow delivered for a penetration of twenty feet, bringing the vessel from 10 knots to rest, is approximately six and one half million pounds; that blow being forward of the turning

(Testimony of Baldwin M. Woods.)

point exerts a moment about the turning point to turn the "Chicago" to starboard; the action of the four propellers with full power astern at 27,000 horse power available, amounts to a thrust of about 150,000, pounds, which acts along the axis of the vessel and produces no moment to turn. The flow of the water past the rudder is what actuates the rudder. That flow, with a speed of six knots forward and engines reversed, is materially diminished. Under the conditions, the thrust exerted by the rudder to turn the vessel materially would be diminished and would not be comparable to either of the other thrusts, it would be less than one per cent of the six and a half million pounds.

Q. Now, similarly, in your test of the "Chicago" from the stop position you said that you did not think that the fact that she was on a hard right rudder or that her engines were in fact started astern, that that made any difference. Why was that?

A. First that the thrust on the shaft reversing would in that case be even less than 150,000 pounds because of the reduced [519] efficiency of the propellers at zero speed, and in the next place the rudder would be quite ineffective.

Q. Is there any advantage, or is there a disadvantage in conducting the model tests, without having the "Silver Palm" model puncture the side of the "Chicago" model? Is that a disadvantage?

A. In fact there resulted an unexpected advantage when the "Chicago" had a forward speed, be-

(Testimony of Baldwin M. Woods.)

cause it was possible, since there was no penetration, to judge the extent of the side-swiping forces which were called into play by the impact.

Q. When the "Chicago" was put at rest, or in the test when she was moving astern, was there any advantage or disadvantage in the fact that you could not get your model to bite into the side of the "Chicago"?

A. In this case when it was at rest or going astern it made very little difference, since there was no disposition, there was no tendency to tangential motion, that is to say, slippage of the bow of the "Silver Palm" along the side of the "Chicago."

Q. Several questions were put to you by counsel regarding the action of the "Silver Palm's" engines full speed ahead at the moment of impact, or something of that sort, and I believe you said that they were of no consequence. Why was that?

A. If the power is applied to engines which have been idling, as we call it, or turning slowly, without power, in a ship in which the propeller is being revolved by the passage of water outside, being driven, so that the propeller in turn through the shaft is turning the engines, it is necessary for the engines to come up first to a speed which will give no thrust, and then continue to a speed which will give a forward thrust; that will require an appreciable time. If the speed of the oncoming vessel was ten knots, that is, if the speed were approximately ten knots, approximately 17 feet per second, if it were uniformly decel- [520] erated, it

(Testimony of Baldwin M. Woods.)

would require two seconds to penetrate to the extreme length. In the two seconds which I have mentioned it would not be probable and would probably be impossible for the engines just referred to, to come up to speed and to have acquired any strong thrust. In the next place, the thrust delivered to the propellers, even though the engines reached full power, would be of the order of 35,000 pounds, considering an efficiency of 50 per cent under the conditions mentioned. I am willing to concede that the efficiency might be ten points high. 35,000 pounds added to or even subtracted from the xi and a half million pounds, is in the fourth or fifth decimal place, and makes no difference.

Q. You have used several terms that I believe are laboratory terms. You have used the term "control variable." What did you mean by the term "control variable", and what were the control variables in this case?

A. In every experiment in any field of physics or mechanics one starts with certain variables which are assumed and which he attempts to control, as we say. In this case, the variables controlled were the speed of the two vessels, the angle between their courses and the point of impact.

Q. You have used the term "misfired" and valid results". I think those are laboratory terms and I wish you would explain those terms.

A. I used the term "misfired" perhaps loosely, to designate a test which gives no results. In other words, the control variables were not controlled. For

(Testimony of Baldwin M. Woods.)

example, in the model test, if one of the models failed entirely to strike the other, or if it struck at a position not the one assumed for the purpose of the test or at a different angle, then such tests was disregarded and their results were not considered nor recorded.

Q. I think that is clear now. Some mention has been made of [521] whether or not you knew about the thinness of the "Chicago's" plates or the type of construction of the "Silver Palm". I think you said something about that in your examination of the pictures. In your opinion did the construction of the two ships have anything to do with the result of your tests?

A. No. The construction of the two ships would have fundamentally a good deal to do with the precise character of the damage done at the point of impact. They would not have affected the dynamics of the case, that is to say, the character of the rotation of the vessel.

Q. You were asked whether or not you had in mind any wind effect existing at the time of the collision. Was or was there not any wind at the time you performed your tests?

A. There was no wind, that is to say there was a light air, under the definition which I gave, a movement of air not to exceed 50 feet a minute.

[522]

Q. Is that a desirable or an undesirable condition for a model test?

A. It is desirable for a model test of this character, unless one is attempting to measure the wave

(Testimony of Baldwin M. Woods.)

effect and has adequate equipment for it. The wave effects in this case were inconsiderable from the point of view of the models, and no wave effect was desired in the model test.

Q. You were asked a question whether you had in mind the absence or presence of wind at the time of the collision. What was your answer?

A. As far as the model tests were concerned, we did not take into account wind. In interpretation of the tests on any questions some account could be taken if knowledge is available of the direction and strength of the wind. For example, the resistance of a ship at a given speed, as I stated yesterday, is made up, roughly, of the resistance of the submerged portion, the resistance near the water line, due to wave motion, and the resistance of the superstructure in the wind. In many cases with relatively low wind and moderate speed the resistance of the superstructure to the wind is not a matter of great consequence.

Q. Would you consider a wind of approximately Force 3 from the north northwest a wind of consequence?

A. I am not familiar with that term. May I ask does that mean approximately 10 or 11 knots?

Q. Force 3 is Force 3 on the Beaufort Scale, I believe it is a wind of approximately 10 to 12 knots, or 9 to 12 knots.

A. That would increase the resistance of the vessel going against it and would aid it to stop in a slightly shorter distance than it would otherwise

(Testimony of Baldwin M. Woods.)

require to stop in case of full astern. It would not, from the point of view of these experiments, make any difference, as the important things were the vessel striking, [523] as I said before, at a right angle, the right point, and the right speed.

Q. You were asked some questions about these little things in the bottom of this model. Do you consider them of any importance?

A. In the model test?

Q. Yes.

A. No.

Q. Professor Woods, when you were instructed to perform these model tests, were you given any instructions as to the result to be obtained?

A. No. My instructions were to simulate certain conditions, namely, the conditions to which we have repeatedly referred, and to report whatever results were obtained. In other words, the test was to be a scientific test, and whatever results were obtained were to be recorded. I might say that in going over the cases which we have discussed I have not admitted any result which would give a different position from those given in the diagram submitted, where the initial control conditions were met.

Q. Did you have any preconceived idea of what the results would be before the performance of the model tests?

A. From my own computations and studies I had a general impression of reaching approximately these conclusions.

Mr. LILLICK: Might I interrupt? We are not

(Testimony of Baldwin M. Woods.)

interested in the impressions of the professor. We have the results of his experiments and what his impressions were is of no concern in this case, and I object to it on the ground that it is not within the issues.

Miss PHILLIPS: Q. My question was, at the commencement of the performance of the model test did you have any preconceived ideas of what results would be obtained? Does counsel say that is not entirely proper?

Mr. LILLICK: I still insist that question is objectionable [524] upon the ground that we are not interested in what Professor Woods' impressions were. We are interested in the results that he obtained.

Miss PHILLIPS: I think perhaps my question is badly worded. I withdraw it.

Q. Professor Woods, in performing the tests did you attempt in any way to control the results of the tests other than by fixing the control variables which you started with?

A. No.

Miss PHILLIPS: That is all.

#### Recross Examination.

Mr. LILLICK: Q. Professor Woods, to boil it down to one point, what I understand is the result of some of your testimony, in your opinion from the results obtained in your tests it would have made no difference in the results obtained had the models that you used permitted the "Silver Palm"

(Testimony of Baldwin M. Woods.)

to enter the "Chicago's" side and stay there during the time the "Chicago" was pushed over an arc of 50 degrees, with the engines operating on the two vessels?

A. I would like to have that question read.

The COURT: Read the question.

(Last question repeated by the reporter.)

Mr. LILLICK: Answer "Yes" or "No," and then explain.

A. If the answer of "Yes" means that it would have made no difference, my answer is "Yes." In the cases where the "Chicago" was at rest or moving astern, where there was no tendency to what I shall call tangential motion, longitudinal motion along the side of the vessel; in the case where the "Chicago" was moving forward the penetration would have modified the forces acting, and, as I said before, would tend to greater side-swiping.

Q. The answer, then, is Yes, it would have made no difference, with your explanation?

A. Yes, in the two cases I have mentioned.

Q. You explained the term "variable controls" in your tests as [525] being three factors, did you not, the control variables were three factors?

A. Yes.

Q. What were they?

A. The speeds of the two vessels, the point of contact, and the angle between the courses.

Q. And all of the balance of the elements involved in coming to a scientific conclusion with re-

(Testimony of Baldwin M. Woods.)

spect to your tests were outside of the field of variable control?

A. Yes. That includes all of the constants of the vessel.

Q. And in saying it includes all constants of the vessel, you did not take into consideration engine power?

A. I did not.

Q. You did not take into consideration rudder movement?

A. I did not.

Miss PHILLIPS: Your Honor, counsel is now beginning to go over the examination of yesterday afternoon.

The COURT: I think it has been asked and answered before.

Miss PHILLIPS: I object on the ground it has been asked and answered.

Mr. LILLICK: Very well.

Q. You gave us a figure of 150,000 pounds with relation to the striking impact. I am not sure about that, Professor Woods. Did you not use 150,000 pounds?

A. I said that the total pull on the shaft of the propellers retarding the ship and with full force astern with about 27,000 horsepower would be approximately 150,000 pounds.

Q. That is what I wanted to know. Professor Woods, if the "Chicago" had been in fact proceeding at a higher rate of speed than 6 knots the

(Testimony of Baldwin M. Woods.)

experiments or tests would have turned out differently, would they not?

A. I have covered the case that the "Chicago" moved up to a speed of 10 or 12 knots in earlier discussion, which would give results comparable, and which did in the tests give results comparable to those obtained with the forward speed [526] of six knots, only increasing the side-swiping tendency.

Q. And by the side-swiping tendency you mean contact and the two vessels going away from each other and not paralleling each other?

A. Yes.

The COURT: They are parallel, but their sterns are not in the same direction.

A. They are parallel but the prows are in opposite directions.

Mr. LILLICK: Q. Professor Woods, did you make a written report concerning the diagrams that you have given us?

A. No.

Q. And do I understand you that except for what you saw in the testimony of the gentlemen who were before the Naval Court of Inquiry, which we have here, and the testimony of the officers and crew of the "Silver Palm," you had no other data upon which to base this parallel result after the vessels did come to rest?

A. No data supplied for the purpose of this case, no.

Q. Except that you knew from all of these statements the vessels eventually landed, for one reason or another, in a parallel position?

(Testimony of Baldwin M. Woods.)

A. Yes.

Q. Have you the computation upon which you based the diagrams?

A. Yes.

Q. Are they in the form of notes?

A. They are my original notes made at the time of the experiments.

Q. Have you those with you, Mr. Woods?

A. Yes.

Q. May I look at them?

A. Yes.

Mr. LILLICK: That is all.

Miss PHILLIPS: That is all.

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CARL J. VOGT,

Called for the United States, sworn.

Miss PHILLIPS: Q. Will you please give your full name?

A. Carl J. Vogt. [527]

Q. What is your occupation?

A. Assistant professor of mechanical engineering at the University of California.

Q. Will you please state your professional training?

A. I graduated from the University of California in 1926, and continued that engineering training at the University while I was working in the Research Department of the Standard Oil Company of California at Richmond. In 1928 I returned to the University and continued with engineering instruction, as well as taking courses at the same time.

(Testimony of Carl J. Vogt.)

Q. Did you assist Professor Baldwin M. Woods recently in conducting some model tests?

A. Yes.

Q. On what date?

A. On March 11.

Q. Prior to assisting him in these tests, did you perform any tests by yourself?

A. I did.

Q. Where?

A. At the University in the weir in the Hydraulic Laboratory.

Q. On what date?

A. That was on March 4.

Q. Professor Vogt, look now at Government's Exhibit 9-B, and having that in your hand, did you assist Professor Woods in performing any model tests in which the position of the ships represented in that diagram was the resultant condition of impact?

A. Yes, I did.

Q. Will you state what were the conditions under which that resultant condition is based.

A. When that vessel, here, that is, the larger of the two, initialed with the letter "c," representing the "Chicago" has a slight forward or slight reverse velocity over dead in the water—and by "slight velocity" I mean less than or approximately one knot.

Q. In performing the test resulting in the position of the vessel marked "C", what speed did you give the vessel which struck the vessel "C"?

(Testimony of Carl J. Vogt.)

A. Corresponding to 12 knots. [528]

Q. What angle of impact?

A. About 40 degrees.

Q. Professor Vogt, you have referred to having made previous tests to those on March 11 by yourself in the laboratory. Will you state whether or not in your laboratory test of March 4 you made any tests similar to the test represented in Government's Exhibit 9 and 9-B?

A. I did, and got the same result.

Q. And got the same result?

A. Yes.

Q. Why, then, did you repeat the tests a week later?

A. I performed the first series of tests, myself, which was rather difficult. The weir in which I made the test was rather small, and in order to get away from possible side effects, possible bottom effects on the model we repeated them in a larger body of water.

Q. You referred to other tests. Did you make any other tests giving the ship marked "S" a velocity of 12 knots striking at 40 degrees, and giving the ship marked "C" a speed different than stopped, slowing moving ahead, or slowly moving astern?

A. Yes, we did.

Q. What other speed?

A. One was a speed of approximately six knots ahead, and another one was we put it two or three knots astern, or four knots astern.

Q. When you gave the model marked "C" a

(Testimony of Carl J. Vogt.)

speed ahead of six knots and with the model "S" struck "C" at an angle of 40 degrees, "S" moving approximately at 12 knots, was the resultant position the same as that shown in Government's Exhibit 9-B?

A. It was not.

Q. When the ship marked "C" moved astern two, or three, or four knots and you with the ship marked "S" moving at 12 knots ahead struck at an angle of 40 degrees, was the position resulting from the impact similar to that shown in Exhibit 9-B?

A. No, it was not.

Q. In your model test experiment in the University Laboratory of [529] March 4, did you perform there a model test illustrating the speed of the "Chicago," "C", at 6 knots, and the vessel "S" at a speed of 12 knots striking at an angle of approximately four degrees?

A. I could not say that the vessel marked "C" had a speed of six knots, due to the fact that I was performing the test, myself, and I had to give it an initial velocity and then go to the other side of the weir and start the other vessel.

Q. What velocity would you estimate the model "C" had when struck by the model "S"?

A. It did have a forward velocity, possibly it was four or five knots, but I could not vouch for the fact that it was that value.

Q. Was the resultant position of this test per-

(Testimony of Carl J. Vogt.)

formed in the laboratory the same as the other position shown in Exhibit 9-B?

A. No, the only time that I got this position was when the model marked "C" was at rest.

Q. When the model "C" moved astern, did you have any model test in the laboratory in that situation, having the "Silver Palm" vessel "S" moving at 12 knots and striking at an angle of 40 degrees?

A. Yes, I did.

Q. Was the resultant position similar to that in 9-B?

A. Not when the vessel marked "C" was moving backward or in any other direction.

Q. You have already expressly limited moving slowly?

A. Yes, slowly.

Q. Did you have any instructions from the United States Attorney's office with respect to the experiments which you, yourself, should perform?

A. No, I did not.

Q. Have you ever met any member of the staff of the United States Attorney's office, to your knowledge, prior to to-day?

A. No, I have not.

Miss PHILLIPS: You may cross-examine. [530]

#### Cross Examination.

Mr. LILLICK: Q. Professor Vogt, how was it that you made these experiments on March 4, how did you happen to make them?

A. I was consulted by Professor Woods, and in

(Testimony of Carl J. Vogt.)

the discussion as to the forces that might be acting on these vessels at the time of impact, and to get a result indicated by figures that we had available, I wondered just as to what conclusion we would come from model tests, and I thought I would make those tests on my own initiative.

Q. That was before Professor Woods had made any tests, was it?

A. Yes.

Q. So that it was as a matter of fact an academic discussion between you?

A. Yes.

Q. Professor Vogt, in your opinion would the result obtained in the diagram Government's Exhibit 9-B have been attained if the models used by you had permitted the "Silver Palm" going at a speed of 12 knots an hour puncturing the model of the "Chicago" so that after puncturing her she would have been moving around over an arc of 50 degrees to the right before the vessels separated and then the engines of the "Chicago" kept in motion until she backed away to a parallel position? That is rather a long question and I think I will have it read back and have you follow it.

A. I think I have the point of the question, permit me to repeat it, whether we would have gotten the same position if the "Chicago" had her engines going in the reverse direction and had the model marked "S" punctured the model marked "C".

Q. And she had been swinging over, the "Chi-

(Testimony of Carl J. Vogt.)

icago" had been swinging over 50 degrees before the vessels parted.

Miss PHILLIPS: You mean swung around instead of swung over.

Mr. LILLICK: Swung around.

A. Yes, I believe we would have gotten the same result. [531]

Q. So that it would have made no difference, in your opinion, if the "Silver Palm" had stayed in contact with the "Chicago" over a period with the "Silver Palm's" engines going ahead until the "Chicago" and the "Silver Palm" together had arrived at the point where the "Chicago's" course had been changed 50 degrees to the right, and the "Chicago" had then backed off and stopped and they came to a position about parallel?

A. Well, that, of course, would depend on the length of time that the "Chicago's" engines had been going back, the condition of the water around the stern, as to what the propeller forces would have been, rate of propeller rotation.

Q. Would it not also be dependent upon the amount of backing power upon the "Chicago" and also the time during which she backed away?

A. Yes, it would, if you consider the time the "Chicago" could have gotten in any position she desired.

Q. Surely you do not mean that when the model "S", representing the "Silver Palm" hits the model representing the "Chicago," and eventually comes into a position parallel to the "Chicago," that the

(Testimony of Carl J. Vogt.)

same course would be described by those vessels where power had been applied to them?

A. Yes, I believe they would, considering the masses of the vessels and the power that might be applied during a brief period of time.

Q. What becomes of the time element involved in the period during which the two vessels are together and the "Chicago" moves over that arc of 50 degrees?

A. I do not believe I understand the question, the time element. Do you refer to the time during which the engines were in operation?

Q. Let me put it a different way. Professor Vogt, during the time in which the two models would be together, if your tests had involved the "Silver Palm" cutting into your model of the "Chicago," and pushed her or moved with her over an arc of 50 [532] degrees, how long a time, under your experiment, without the two vessels cutting into each other, did it take to have the "Chicago" swing over 50 degrees?

Miss PHILLIPS: I believe that question is unintelligible, and I object to it on that ground.

Mr. LILLICK: I will reframe it.

Q. Do you know what I mean?

A. I am afraid I cannot follow you.

Q. In the example I have given you I have assumed that the "Silver Palm," with her engines, was moving in contact with the "Chicago" and her bow in the side of the "Chicago" moved with the "Chicago" until the "Chicago's" course had been

(Testimony of Carl J. Vogt.)

changed 50 degrees. Now, there is a time element involved in that, and there is testimony in the case that that actually occurred. In the experiment that you performed, the model of the "Silver Palm" did not cut into the model of the "Chicago," did it?

A. No, it did not.

Q. Your model of the "Silver Palm" hit the model of the "Chicago" and made but one contact, that is right, is it not?

A. At times, sometimes due to the heeling of the "Chicago," it would come back and cause an impact on the "Silver Palm."

Q. Hit and rebound?

A. Rebound.

Q. And then moved away?

A. Yes.

Q. Did that occur only when the "Chicago" was going at an estimated speed of 6 knots an hour, or was it only when the model of the "Chicago" was at rest?

A. No, that was when the "Chicago" was going at an estimated speed of 6 knots, or when it was at rest.

Q. In other words, on both occasions it did that?

A. It did it several times, that is due to the heeling, it gave a reaction, a rebound.

Q. The time element that you used on the "Silver Palm" of 12 knots an hour was the time element that you used all through the experi- [533] ments, was it?

A. Yes, it was.

(Testimony of Carl J. Vogt.)

Q. So that you would be able to tell me relatively how long after the impact between the two models, when the "Chicago" was hit and hit again by the recoil, until the "Chicago" had turned over an arc of 50 degrees, would you not?

A. No, I do not believe I could tell you that, because we kept no record of the time of the coming back reaction.

Q. So that neither you nor Professor Woods paid any attention to the time after the impact on any one of your tests that resulted in the two vessels coming to a parallel position so that you would be able to tell me how long that took?

A. No, we took no time on that.

Q. Your two models came together and then you waited until they came to a rest in the water?

A. I would not say rest, that might be somewhat misleading, because models never come to a rest, but we waited until they came in that relative position to each other.

Q. Did they change from that position subsequently?

A. If they should be allowed to remain in that position for a period of time, say ten or fifteen minutes or maybe half an hour, they will spread apart or go in some other position.

Q. But we have been discussing when they came to a rest—you know what I mean, do you not—after the impact and the motion made thereby resulting in the two vessels coming to a rest in the water?

(Testimony of Carl J. Vogt.)

A. Yes, but if we allowed that to go on they would take another position in the water.

Q. The ultimate result was that in some of the tests they brought up in the position indicated by Government's Exhibit 9-B?

A. Yes.

Q. How many tests did you make that showed that?

A. Well, I could not definitely say how many, I would say approximately 15 or 20. There were, I am pretty sure, three or four that we ran in suc-  
[534] cession that gave the same result.

Q. Do you mean that during fifteen or twenty tests altogether for different speeds?

A. Oh, no, we had many more than that. [535]

Q. Then you had 15 or 20 tests for the examples you have given with the "Chicago" running six knots an hour and the "Silver Palm" running 12 knots an hour?

A. No, pardon me, I was talking about this test which was with the "Chicago" dead in the water. With the "Chicago" going six knots there were probably three or four tests that we made at that speed or approximately that speed.

Q. What I would like you to tell me from that book is how many tests altogether you and Prof. Woods made with an indicated speed of 12 knots on the "Silver Palm" and an indicated speed of approximately six knots on the "Chicago"?

(Testimony of Carl J. Vogt.)

A. I could not give you the exact number on that but I would say that we probably made seven or eight tests.

Q. How many tests did you make with the "Chicago" at rest?

A. We must have made twelve or fifteen with the "Chicago" at rest.

Q. And out of the 12 or 15 that you made with the "Chicago" at rest, you used the constant of 12 knots for the "Silver Palm"?

A. Yes.

Q. Out of the 12 or 14 tests that you made, how many resulted in the vessels coming to the position indicated by Government's Exhibit 9-B?

A. They all resulted in that position.

Q. They all resulted in that position?

A. When the point of impact was at the same point, about three-quarters of the way forward and the angle of 40 degrees or 45 degrees.

Q. So that you had 12 or 14 completed tests with the "Silver Palm" running at 12 knots and the "Chicago" approximately at rest, which resulted in the diagram shown on Government's Exhibit 9-B?

A. Yes.

Q. You made no test whatever with the two models at that speed that did not result in that same position when they came to rest?

A. To the best of my knowledge, no.

Q. During these 12 or 14 tests at that speed, did your models all strike at that same approximate point on the "Chicago's" port [536] bow?

(Testimony of Carl J. Vogt.)

A. Yes, the same point and at the same angle.

Q. In making these tests did you always handle the model for the "Chicago" or the model for the "Silver Palm"?

A. The model for the "Silver Palm" except when I made them by myself a week prior to this.

Q. What I have been asking about has been about the tests made by you with Prof. Woods.

Miss PHILLIPS: I did not so understand the witness, because I think he has covered both.

Mr. LILLICK: I will ask him to be sure. It is my understanding, Professor Vogt, that the answers you have been giving me about the tests have referred to tests that were made by you with Prof. Woods?

A. Yes.

Q. And you say, during those 12 or 14 tests, which model did Prof. Woods handle?

A. He handled the one that represented the "Chicago".

Q. How did you make the tests; just tell me exactly what you did and exactly what Prof. Woods did.

A. We took the models to the University swimming pool, located in Strawberry Canyon in Berkeley, where we had ample room. The first thing I shoved the model representing the "Silver Palm" about 25 or 30 feet out in the pool, while Prof. Woods towed or put in position the model representing the "Chicago" about four or five feet from

(Testimony of Carl J. Vogt.)

the edge of the pool, and then when we figured that the model representing the "Chicago" was at rest I would tow the model representing the "Silver Palm" or give it an initial impulse which would correspond to a speed of about 11 or 12 knots at the time of impact, so that the "Silver Palm" would strike the "Chicago" at about three-quarters of the way from the stern, or one-quarter away from the bow, and in order to determine its initial velocity of 11 or 12 knots, we made several runs along a straight section of the pool which [537] was measured off, and took our time on that, and then with the same tension on the string, we could check quite closely as to what the velocity was.

Q. How deep was the water, Prof. Vogt?

A. At least ten feet.

Q. How did you get the model of the "Silver Palm" 25 feet out into the pool?

A. Just gave it a shove until it reached the end of the string.

Q. And let it run out to the end of the string you had on it?

A. Yes.

Q. After it reached the end of the string, 25 feet from you, how did you fix its course when you pulled it in?

A. Before it reached the end of the string I put a slight tension on the string so that it would not start to come back, so that it came to a rest at that point, and then I directed the string over the

(Testimony of Carl J. Vogt.)

portion of the bow where I intended to have the model struck, and kept the string in that position while I was giving it this impulse, and then after the model came up to speed, I allowed the string to become slack so that there was no further impulse given to the model.

Q. When you gave it that impulse, Prof. Vogt, did you do it by hand without stepping back?

A. Yes, I did.

Mr. LILLICK: It is now 4 o'clock and I have quite a little more examination of the witness.

Miss PHILLIPS: I would like to go on and finish with the witness. I had an assurance that if the witness was on the stand at 4 o'clock, his examination could go on and be completed.

The COURT: I have taken Mr. Lillick's statement as to the length of the examination he is going to have.

Miss PHILLIPS: I think counsel could complete it if he went on.

Mr. LILLICK: I could not complete before 5 o'clock.

The COURT: We will take an adjournment now until tomorrow morning at 10 o'clock.

(An adjournment was taken until March 23, 1934 at 10 o'clock)

Filed June 19, 1934. [538]

(Testimony of Carl J. Vogt.)

Friday, March 23, 1934.

CARL J. VOGT,

Cross-examination (resumed).

Mr. LILLICK: Miss Phillips, we desire to offer in evidence the notes which Mr. Woods said he had made.

Miss PHILLIPS: I object to that, your Honor, as being unintelligible without the witness' explanation. He testified that he performed many experiments with variation of speed, and I think this in and of itself would not assist the Court.

The COURT: I think it would be better to bring him back, because he handed the book to you, didn't he?

Mr. LILLICK: He did not designate any pages. I asked him whether he had these notes with him, and he said yes, and produced them and handed them over to me, and I want to offer them in evidence. I can call attention in the record to what I asked him for.

Miss PHILLIPS: I think your Honor would get a great deal more out of this data if the witness were to explain them. He testified to variations of the speed.

The COURT: As I understand, the whole book is being offered is it not?

Mr. LILLICK: These are the notes that I called for.

The COURT: Let me understand what you are

(Testimony of Carl J. Vogt.)

offering. Are you offering the book in evidence, or just the two pages?

Mr. LILLICK: That is what was given us as the notes he had made. I asked him for his notes at the time of the experiments and he handed me this.

The COURT: The only question is as to the value of them to the Court, because if the court has not any information as to what he put down here it would be meaningless. [539]

Miss PHILLIPS: I will withdraw my objection, your Honor.

The COURT: If there is no objection it may be received as Respondent's Exhibit 11, the two sheets.

(The two sheets of notes of Baldwin M. Woods were marked "Respondent's Exhibit 11".)

Mr. LILLICK: Professor Vogt, in making your tests with Professors Woods, and hereafter unless I specifically refer to the tests you mentioned as having been made prior by you on March 4th, I mean the tests made at the swimming pool by both of you—when you started your model of the "Silver Palm" at 25 feet distance from the model of the "Chicago" what distance had you in mind as between the two vessels, themselves, at sea?

A. At the time I started the "Silver Palm" there was a distance of about 20 feet between the model of the "Silver Palm" and the model of the "Chicago."

Q. My question is, what distance had you in

(Testimony of Carl J. Vogt.)

mind as a comparable distance that the two vessels were apart when at sea?

A. We did not figure on the distance between the two vessels at sea. In a model test we were only interested in where they are at the instant of impact.

Q. So that the relative size of the models of 1 to 150 at no time in your test were assumed as having any bearing upon the actual conditions that surrounded the two vessels before the collision at sea?

A. None, whatsoever.

Q. Yet, I understand you computed the speed of your model of the "Silver Palm" at 20 feet away as having a velocity of 12 knots?

A. No, the velocity of impact, we tried to get the velocity at the instant of impact as 11 knots.

Q. Then I must have misunderstood some of the testimony. It is your understanding that what you were seeking to attain from your tests was a velocity at the moment of impact?

A. Yes. [540]

Q. Of 12 knots, by the model you used of the "Silver Palm"?

A. Yes.

Q. And correspondingly with the "Chicago" on your various tests a speed upon her part varying from one knot astern to two knots forward, and in other tests with a speed upon the part of the "Chicago" of approximately 6 knots ahead when the vessels actually came in contact?

A. Yes, we were only interested with the instant of impact.

(Testimony of Carl J. Vogt.)

Q. And yet all of that was based upon models 150 times smaller than the vessels?

Miss PHILLIPS: May I have the question read?

The COURT: Read the question.

(Question repeated by the reporter.)

A. Yes.

Mr. LILLICK: Q. Did you perform any tests with an assumed speed of 10 knots on the part of the model which you used for the "Silver Palm"?

A. A speed of 10 knots?

Q. Yes.

A. Not that I recall. We tried to maintain the speed at 11 knots, which would give us—

Miss PHILLIPS: Will you speak up so that we can hear you? It is very hard to hear you.

A. (Continuing) We tried to keep the speed at approximately 11 knots with, say, an accuracy of plus or minus of that, 10 per cent. of that speed either way.

Mr. LILLICK: Q. Then you did not try to keep the model of the "Silver Palm" that you used at a velocity of 12 knots at the time of the impact?

A. Yes, I think we tried it at 12 knots, but that was our mean speed, allowing for an error of 10 per cent. on either side of it, so it would be between 10.8 and 13.2 knots. That would be about the limit of our accuracy.

Q. Then when you stated just a moment ago that you had been informed that the test was to be made

(Testimony of Carl J. Vogt.)

at a speed of 11 knots, your pre- [541] vious answer that your tests were made with a speed of 12 knots at the time of impact is not in accordance with what you really did?

A. Well, all I can answer to that is that within the limits of accuracy our speed was somewhere between 10.8 and 13.2 knots. That is, I cannot say definitely that it was 11 knots at the instant of impact, or that it was twelve knots.

Q. What, in difference in time, was your computation based upon with respect to the feet per second that the model was to go?

A. I would have to figure that. One knot is equivalent to 1.7 feet per second, and we based our calculation on that.

Q. Then, basing the calculation upon that, what is the difference using 1.7 feet per second in the distance covered by your model when it was striking the "Chicago" at a rate of speed of 10.8 in comparison with the striking of the "Chicago" at a speed of 13 plus?

A. Will you repeat that?

The COURT: Read the question.

(Last question repeated by the reporter.)

A. The speeds of impact would be in the ratio of 10 to 13.

Q. Give me that ratio in 1.7 feet.

Miss PHILLIPS: Your Honor, might I suggest that arithmetical calculations like that need not be done in court.

(Testimony of Carl J. Vogt.)

The COURT: If the witness does not feel that he can answer that from the stand, otherwise he can compute it. If he wants a pencil and paper to use that is his privilege.

Miss PHILLIPS: It seems to me counsel is putting the witness through a test in mental arithmetic, and I think if the witness states the principle it is not necessary for counsel to have the multiplications, additions, and subtractions put down in Court. If the witness states the principle it is unnecessary to protract the examination and take so much of the time of the Court about it. I think that is simply a matter of arithmetic. [542]

Mr. LILLICK: In reply to Miss Phillips' suggestion, I am not asking the witness the question for the purpose of putting him through an examination with respect to mental arithmetic. What I want to know is the difference in feet that the model of the "Silver Palm" traveled, the assumption being that she traveled 1.7 feet per second, going at the rate of 10.8 knots at the time of the impact on one occasion, and upon the other 13 plus at the time of the impact. It is not mental arithmetic. It is a desire on my part to find out what actually occurred with respect to these models.

The COURT: In other words, what you desire to know is, as I understand, at these various speeds how many feet actually a second this miniature vessel went?

Mr. LILLICK: Exactly. Do you wish a sheet of paper to do that?

(Testimony of Carl J. Vogt.)

A. I think that we have a misunderstanding here. What I meant by 1.7 was the feet per second was that was equivalent to 1 knot per hour; if she was making ten knots per hour it would be ten times that, or 17 feet per second.

Q. So, as a matter of fact, the computations are based upon a speed of one knot per hour, being 1.7 feet per second?

A. Yes.

Q. How did you regulate the speed of the model you used for the speed of the "Silver Palm" at the moment of impact when the initial pull put upon the model 20 feet away was the only pull exerted upon the model?

A. We did not try to alter the conditions of motion of the "Silver Palm" after we had once given it the initial impulse; in other words, we would assume, then, when the "Silver Palm" was making 12 knots per hour she shut off the engines and coasted.

Q. But I understood you a few moments ago, Professor Vogt, to say your computation was based upon a velocity at the moment of impact of a 10 per cent. difference in speed at that time of 12 [543] knots per hour. That is right, is it not?

A. Yes.

Q. Now, I understand that you attained the initial velocity upon the model of the "Silver Palm" by pulling upon it with a string at a distance of 20 feet away from the model of the "Chicago." That is right, is it not?

(Testimony of Carl J. Vogt.)

A. Yes.

Q. After you gave it the initial pull the string was dropped in the water and the model of the "Silver Palm" approached the "Chicago" and finally hit it?

A. Yes.

Q. Your results were not always the same, were they, with respect to the striking of the two models together when you started the model of the "Silver Palm" 20 feet away from the "Chicago"?

A. No, the point of impact was not always the same. Sometimes we missed entirely.

Q. Some times the two vessels would miss entirely?

A. Yes.

Q. Would your model of the "Silver Palm" yaw in the water?

A. I think we could say that it did under the conditions when the tests were made when the "Chicago" had a forward velocity.

Q. But you could make it strike the "Chicago" when the "Chicago" model was at rest?

A. I do not think we ever missed in that case, although the point of impact varied slightly from one point to another.

Q. Now, you have given me the distance between the model of the "Chicago" and the model of the "Silver Palm." What was the distance from your hand to the portion on the model of the "Silver Palm" to which the string was attached?

A. I should assume 25 or 30 feet.

(Testimony of Carl J. Vogt.)

Q. 25 or 30 feet?

A. Yes.

Q. Did you use anything while the model of the "Silver Palm" was coming toward you to keep it in a straight line?

A. No.

Q. Would it have been possible for you to have had these two models strike one another had the model of the "Silver Palm" been, [544] while it was coming toward you, changing over a course of 10 degrees to her right?

A. Well, in a model test we would not take that into account. We are interested in the condition at the instant of impact. We would take that as the position that she would have at the time of impact on a straight course.

Q. Regardless of whether prior to impact, and at the time of the impact, and thereafter, the "Chicago" was on a hard a-starboard or hard right rudder, you paid no attention to that?

A. No, we did not.

Q. Had you been informed that after the collision the "Silver Palm's" course was changed to left 165 degrees?

A. No, I do not believe I had been, not to the best of my knowledge.

Q. Is it your opinion from what you knew of the "Silver Palm" and "Chicago," with the "Chicago" proceeding at 6 knots an hour at the time of the impact, and the "Silver Palm" proceeding at a

(Testimony of Carl J. Vogt.)

speed of 10 knots an hour, that the stem of the "Silver Palm" would not have punctured the side of the "Chicago"?

A. Do I believe that it would not have punctured the side of the "Chicago" under those conditions?

Q. Yes.

A. Yes, it probably would have punctured the side, but I believe the "Silver Palm" would have had her bow sheared or badly crushed.

Q. At 6 knots an hour, on the part of the "Chicago", and at 12 knots an hour upon the part of the "Silver Palm," by Government's Exhibit No. 10, you would say that the "Silver Palm" and the "Chicago" would have gone by each other in opposite directions, is that your testimony?

A. No.

Q. Let us assume, then, with this diagram, Government's Exhibit No. 10, a diagram covering your tests, that the model of the "Chicago" is going at 6 knots ahead and the "Silver Palm" at 12 knots ahead, what, in your opinion, would have been the result [545] had the "Silver Palm" struck the "Chicago", with your knowledge of the construction of the vessels, and not your models, when the "Silver Palm" struck her at an angle of 40 degrees? Which way would the two vessels have gone?

A. They would have ended up in that position, I believe, but the bow of the "Silver Palm" would have been sheared off.

(Testimony of Carl J. Vogt.)

Q. But they would have ended in the position indicated in Government's Exhibit 10?

A. Yes, in that relative position.

Q. Am I stating it correctly, then, that the two vessels would, after the collision, have been in a position parallel to one another, each pointing in an opposite direction?

A. Yes

Q. Which you term "sideswiping"?

A. Yes, that is at the instant of impact the "Chicago" heeled, and then on the rebound an impact came at another point, which showed that the "Chicago" had moved ahead and the "Silver Palm" had side-swiped it.

Q. With your models both of solid wood and neither having any break?

A. How do you mean?

Q. My question is, your models were both solid wood and neither the stem of the model of the "Silver Palm" was smashed in, nor the side of the model of the "Chicago" not cut into, they were solid pieces of wood?

A. Yes.

Q. They hit and then that side-swiping occurred?

A. Yes.

Q. You know nothing about the heaviness or lightness of the shell plating on the "Chicago," do you?

A. No, I am not familiar with it.

Q. You know nothing about the strength or heaviness of the bow of the "Silver Palm," do you?

A. No.

(Testimony of Carl J. Vogt.)

Q. Have you ever had any experience in navigation, Professor Vogt?

A. Yes.

Q. Where?

A. In the United States Navy; I hold a commission in the Reserve.

Q. As what?

A. As engineer officer. I have had about 22 weeks [546] sea duty in the last seven years.

Q. Then you do know something about the plates on the cruiser "Chicago," do you not?

A. I don't know what the weight of the plates are in that section.

Q. Do you not know that she is a very lightly-constructed vessel?

A. Well, I know that she was light in that forepart, that there was no armor plate in that region, but I don't know the dimensions of the plating.

Q. In your experience in the Navy you have had opportunities, have you not, particularly in the engine-room department, to learn something about the construction of merchant vessels?

A. Yes.

Q. You know, do you not, that a merchant ship of the type of the "Silver Palm" has a very structure in the bow?

A. Yes.

Q. With a very heavily built up forepeak tank with cross girders?

A. Yes.

(Testimony of Carl J. Vogt.)

Q. Frames and ribs?

A. Yes.

Q. An exceedingly strong type of construction, is it not?

A. Yes.

Q. From that knowledge, can you tell me whether, in your opinion, these two vessels when they came together the result was not that the "Silver Palm" did break into the side of the "Chicago"?

A. Was the question that the result was that the "Silver Palm" did break into the side of the "Chicago"?

Q. Yes.

A. Yes, sure.

Q. Do you still believe that if the "Chicago" had been going ahead at 6 knots an hour and she had come into contact with the "Silver Palm" running at 12 knots an hour, that the "Silver Palm" would have side-swiped, as you put it, the "Chicago", and ended after the collision in a position with the two ships practically parallel, each facing in the opposite direction?

A. Yes, I still [547] do.

Q. Did you ever know a steel vessel that has been in a collision to cause the damage that you saw on the "Chicago"?

A. No. I did not see the damage on the "Chicago," merely a photograph of it.

(Testimony of Carl J. Vogt.)

Q. In fact, you have never seen either one of those vessels?

A. No.

Q. I further understand you have never seen the result of a collision between two steel vessels?

A. I recall one vessel that was at a dock on the Embarcadero in San Francisco several years ago that did have the bow stove in, I do not recall what happened, or anything about it.

Q. You don't know the name of the vessel?

A. No, I just remember having seen it.

Q. How long ago was that?

A. I would estimate five years.

Q. Do you remember whether you were informed prior to the tests that the "Chicago" turned in an arc of 50 degrees during all of which time the "Silver Palm" was in contact with her?

A. No, I do not recall that I was informed of that.

Q. Now, a few further questions, Professor Vogt: First, how many tests did you make with the "Chicago" at rest, as you remember?

A. I do not recall, I would estimate probably twenty.

Q. How many tests did you make with the "Chicago" going forward at a speed of 6 knots?

A. Probably less than that, ten or twelve.

Q. How many did you make with the "Chicago" going astern four knots or less?

A. About the same as the ahead, 10 or 12. I am only assuming there the tests that were completed.

(Testimony of Carl J. Vogt.)

not counting any misses or any tests where it struck the stern or amidships.

Q. You made many other tests that were unsatisfactory?

A. Yes, that were unsatisfactory.

Q. In other words, if you did not bring out the results that you wished—

A. (Interrupting) We did not wish any result. All we [548] were after was whether we could repeat this and bring the models to the same position when they came at rest, and we did not make up our mind that we desired certain results, but worked for those results.

Q. Now—

Miss PHILLIPS: Just a minute, let him finish.

Mr. LILLICK: Q. Had you finished?

A. Yes.

Q. All tests that did not eventually bring the two vessels at rest in a position parallel to each other you discarded?

A. Oh, no, we recorded everything, that is all the tests that we made where the impact was about three-quarters of the way forward and a quarter of the way aft, and when the impact was at an angle of approximately 45 degrees, we recorded all of those tests, and if the initial conditions were the same we got the same final results.

Q. Then, to put it so I will understand it, you discarded all tests where you were unable to make the model of the "Silver Palm" strike the model of

(Testimony of Carl J. Vogt.)

the "Chicago" at approximately the position indicated by the exhibit in court where the black mark is?

A. Yes, we did not record those tests.

Q. Had you read the testimony of the officers and crew of the "Silver Palm" before you made your tests?

A. No, I have seen no testimony.

Q. You read none of the statements of the officers and crew of the "Chicago" before the Court of Inquiry?

A. No, I have seen none of it.

Q. In your opinion, would the result of your tests have been different had the models used by you had rudders and two propellers on the "Silver Palm" model, and four propellers on the "Chicago" model?

A. No, I do not believe they would be. I believe they would be the same.

Q. In your opinion these tests would have resulted the same, even [549] had the "Silver Palm" had two propellers, both in forward motion and the "Silver Palm" turning over a course of 10 degrees to the right and the "Chicago" backing full speed with four propellers on a hard right rudder? You think these tests would have resulted the same?

A. I am sure they would. Although the statement in the question would make the problem appear complicated it is not, because we have two forces acting or having a reverse force on the ship,

(Testimony of Carl J. Vogt.)

and the other ship is moving forward, and so we have those two opposing forces, one that is larger than the other, so we can add those two forces and resolve them into one force.

Q. Regardless of rudder?

A. Regardless of rudders.

Q. Regardless of the action the propellers resulted in upon the forward or astern motion of the two vessels immediately after the impact?

A. Yes, because the propellers, the thrust from the propellers is acting along the center line of the ship, the momentum of the ship is along the center line, and so we can add those two forces and resolve them into one single force which was acting in the direction of the vessel.

Q. In your opinion those forces would not have any effect upon the eventual position in which the two vessels came to rest?

A. No. Is it permissible to refer to some calculations that I made on that, so that I can give you the value?

Q. Certainly.

A. I made up a calculation of the kinetic energy of the two ships at the different speeds. Assuming that the "Chicago" was going 6 knots ahead, the kinetic energy at six knots, from this data, came out about forty million foot pounds, and a ship of that size, making 6 knots, and from experience, I have shown that she would stop, if she got an emergency full astern bell, in a distance of 250 feet, and that means that the kinetic energy, which is forty

(Testimony of Carl J. Vogt.)

million feet, divided by the 250 [550] feet stop means that that would be 160,000 pounds thrust of the propellers, which, with the "Silver Palm" making 10 knots, delivering a blow of 6,500,000 pounds, so it would be 6,500,000 into 160,000, which is even less than 2 per cent.

Q. Then, in your opinion, after this mathematical computation, it would have made no difference if the captain of the "Chicago" had, after the collision, maneuvered his vessel and directed her course around so that she took a position through maneuvering and independent action after the collision—

Miss PHILLIPS: Just a moment now: Counsel is going into a subject that is—

Mr. LILLICK: I beg your pardon.

Miss PHILLIPS: I think you ought to make your question a little more definite.

Mr. LILLICK: I will make it more definite.

Q. Professor Vogt, Captain Kays, who was the captain on the "Chicago," testified as follows:

"The vessel, which I found out afterwards was the 'Silver Palm', recoiled as she struck, the 'Chicago' heeled heavily to starboard, and I got the mental impression that she was swinging to the right. The 'Chicago', as she came back, rolled back to port, nearly touched the 'Silver Palm' again, and I think it was about the time she struck that I ordered one-third slow engine, and then I continued to back so that she would back away from her, and we pulled away a short distance and then stopped,

(Testimony of Carl J. Vogt.)

the 'Silver Palm' lying then more or less parallel to us some distance away."

Bearing in mind that the Captain of the "Chicago" so testified, would you still say that the action of the engine so indicated and the maneuvers made by the "Chicago" would not alter the situation that you have figured out and shown on diagram Exhibit 10? [551]

A. I think you mean Exhibit 9.

Q. Thank you, Government's Exhibit 9-B. Yes or No, please, and then explain your answer.

A. I am afraid I could not answer it "Yes" or "No."

The COURT: Answer it the best you can.

A. Might I explain, from the testimony I assume that she was backing straight up, that is, straight back, the engines were turning over one-third astern, the propellers were reversing one-third. That would mean that their relative positions at the time of impact would have been the same as we have shown, but the "Chicago" would have moved back in the line of direction as we have indicated on these charts.

Mr. LILLICK: Q. Then what do you do with the remainder of, as indicated by Captain Kays: "I continued to back so that she would back away from her, and we pulled away a short distance." Surely, you do not mean that would accord with the ultimate result shown by you in Government's Exhibit 9-B?

(Testimony of Carl J. Vogt.)

A. I might see that exhibit I think I could explain to you what I have in mind.

A. With the "Chicago" going one-third astern, her position would come along this center line, she would have been displaced backward, which means that their two lines would be directly on the same course and her bow would have been pointing this way. That is the only change that I believe would have been made.

Q. Notwithstanding the captain's testimony that thereafter he continued to back so that she would back away from her and we pulled away a short distance and the stopped?

A. Of course, pulled away would be moved away, would it not?

Q. So that your assumption is that the captain meant that the vessel moved away, and that means pulled away?

Miss PHILLIPS: That is rather argumentative. The witness [552] has answered the question several times.

Mr. LILLICK: May I have the question read?

The COURT: Read the question.

(Question repeated by the reporter.)

A. I don't know just how he interpreted pulling away, but I certainly do not believe that he meant that the "Silver Palm" was embedded in the "Chicago" and that he gave orders to reverse the engine and that he pulled away; that would mean that there was a moment on the "Silver Palm" which

(Testimony of Carl J. Vogt.)

would swing her around in the other direction and she did not keep her bow in there, as I understand.

Mr. LILLICK: Q. As a matter of fact, you don't know what they did on the "Chicago" and the "Silver Palm," do you?

A. No.

Q. You would not have us believe, Professor Vogt, that your diagram here indicates for a certainty what happened to these two vessels, do you?

A. No, this merely shows that we dissipated a certain amount of energy, and that would be the result that would be had when the energy was dissipated.

Q. Isn't it a fact that the purpose of your experiments was alone to determine the amount of kinetic energy involved in the blow between the two vessels?

A. No. We could calculate the amount of kinetic energy which is dissipated easier than we could by the method this way.

Q. But that was what you performed the experiment for, was it not?

A. No. We performed the experiment to determine just what the action of the vessel was at the time of the impact, and checked them up with the photographs that we had available.

Q. Isn't it a fact that in performing these tests you disregarded the element involved in changes of course made by rudder, changes of course made by

(Testimony of Carl J. Vogt.)

propeller, and changes that were ordered made on [553] the two vessels by the respective captains after the impact?

A. No.

Q. You did not?

A. No.

Q. How do you know what the captains were doing?

A. We had information as to what the position of the two vessels was at impact. Now, no matter how many forces were added at the instant of impact, we could resolve all of those forces into one force on each vessel.

Q. Let me ask the question again: Have you not, in coming to the conclusion which you reached, entirely disregarded the possible effect of rudders on both vessels, engine operation on both vessels, and what the respective captains did after the accident? Answer the question "Yes" or "No," and then explain.

Miss PHILLIPS: Counsel has asked the question several times and the witness has explained it. The trouble is, counsel cannot understand the witness' answer.

Mr. LILLICK: I think I am entitled to an answer.

The COURT: For the purpose of your determination on these models, did you consider those things?

(Testimony of Carl J. Vogt.)

A. The way the question is asked the only way I can answer is to say Yes and No, because there are two questions.

Mr. LILLICK: Q. Yet you told me——

Miss PHILLIPS: Let him explain.

The COURT: Let him answer to what extent it is Yes and to what extent No.

A. As to the first part, as to the action of the rudder and the propellers, I will say we considered them. As to the maneuver of the vessels after the collision, we disregarded them.

Q. Let me ask you, was that because up to the moment that you might say they reached this position, which is represented by this model, that they had an effect, in your opinion, of sufficient moment in the problem to affect this result, but of course after [554] this result is over and the forces had come to an end, then the maneuvering of the vessels would not have affected the result: Is that what your answer means?

A. Yes, that is up to this point, if there was any change of the course it still applies along the center line of the axis, that is, the energy still applies along the center axis of the ship and that is resolved into one force, and, therefore, if there is any force due to the propellers or rudder we could add those forces and properly add them or subtract them from the forward momentum.

Mr. LILLICK: But without a knowledge of the maneuvers thereafter you could do anything with that, could you?

(Testimony of Carl J. Vogt.)

A. Not with that model test. I don't know whether they would mean anything as far as the maneuvering goes after that.

Mr. LILLICK: Might I speak to you off the record, Miss Phillips?

Miss PHILLIPS: No, I would like to have it on the record.

Mr. LILLICK: It is regarding what we are to do this afternoon. I have one witness who will be available at two o'clock. Have you other witnesses now?

Miss PHILLIPS: Yes, I have one other witness. I am prepared to go on and finish my case quite promptly, and then counsel can start in and put in his case. I will say that my case can be completed by a quarter past eleven, that is, my case in chief upon the navigational issues presented by the Government's libel against the "Silver Palm" and the cross libel presented by the Silver Line, Limited.

Mr. LILLICK: So that it will be all right for me to have a witness here at two o'clock?

The COURT: The other cases will not be taken up except by deposition?

Miss PHILLIPS: The second case, your Honor, is the Petition [555] of the Silver Line, Limited for Limitation of Liability. That is a separate case. My case in chief upon the navigational issues in chief can be completed within twenty minutes. The cargo owners case is one which does not involve the navigational issues, and I believe all the cargo

(Testimony of Carl J. Vogt.)

owner would have to do would be to put in proof as to the ownership, which could be done at any time. It could be done before the Commissioner.

Mr. SAWYER: As far as the cargo owners are concerned, we take the position that both vessels are to blame, and as far as the proof of our case is concerned that is something that can be done at the convenience of the Court. It is purely formal proof, and we will be ready to put in that formal proof at any time that is convenient.

The COURT: You could arrange to have that taken before the Commissioner.

Miss PHILLIPS: I am ready to go ahead now. Have you any more questions of this witness?

Mr. LILLICK: Yes.

Q. Prior to making your tests with Professor Woods with whom did you discuss the facts of the collision?

A. With Professor Woods.

Q. Was one of the results which you were to obtain by the tests you made to find out whether the models after the impact would parallel one another?

A. No, that was just the result that came through the test. We were more interested in what we could determine from the action of the forces.

Q. In other words, your test originally was intended to cover only the development of how much kinetic energy was involved in the impact?

A. No, I would not say how much kinetic energy was involved, because I have calculated that, but

(Testimony of Carl J. Vogt.)

particularly to see the direction of the action of the forces, and to see if there was side- [556] swiping which would tend to cause the buckling of the bow of the "Silver Palm" as claimed.

Mr. LILLICK: That is all.

Miss PHILLIPS: That is all.

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ROBERT K. McDONNELL.

Recalled for the United States.

Miss PHILLIPS: Might I offer in evidence as Government's Exhibit next in order the diagram showing the kinetic energy versus speed of the "Silver Palm" and "Chicago", which I think was referred to by Mr. Woods yesterday and the witness to-day.

The COURT: It will be received in evidence as U. S. Exhibit 12.

(The diagram was marked "U. S. Exhibit 12.")

Q. Mr. McDonell, have you examined the prints of the "Chicago" showing the plates injured in the collision?

A. I have.

Q. Did you make a diagram showing the plates injured and the dimensions of the plates at various points of collision?

A. I have it here in my hand.

Q. Does this diagram show the thickness of plates at each point?

(Testimony of Robert K. McDonnell.)

A. It does. I can say that every thing shown on that diagram was either in contact or damaged in the collision.

Miss PHILLIPS: I will offer this in evidence as Government's Exhibit next in order.

Mr. LILLICK: No objection.

The COURT: It will be received as U. S. Exhibit 13.

(The plan is marked "U. S. Exhibit 13.")

Miss PHILLIPS: That is all.

Mr. LILLICK: No questions.

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Miss PHILLIPS: I will now offer in evidence the deposition [557] of William P. Ladd, quartermaster on watch of the "Chicago," taken January 4, 1934, pursuant to stipulation. I also offer in evidence the deposition of M. J. Verick, port lookout of the "Chicago," G. F. Farrell, chief signal man on watch on the "Chicago"; W. T. Wommack, throttle man; C. A. Smith, throttle man, B. Cumbie, depositions taken on March 15, pursuant to stipulation. The remaining portion of the testimony of W. P. Birchmire, which was taken before your Honor, but the last part of which was completed because your Honor had to sit in a three-judge case. I also offer in evidence the deposition of Charles R. Demer, quartermaster, taken on March 20, 1934, pursuant to stipulation, and the deposition of Lieut.-

Commander L. R. Gray, navigator of the "Chicago," taken March 20, pursuant to stipulation. I will say that the last two depositions were taken because your Honor had to sit in the three judge case.

At this time I will offer in evidence Exhibit B for identification and ask that it be marked Government's Exhibit next in order. I will remind your Honor that this Exhibit B for identification was the photostatic copy of the "Louisville" test trial upon which Admiral Simons computed the curves which the "Chicago" at her revolutions ahead and then the dropping of the curve to 110 astern. At the time that was identified the testimony of the various throttle men had not been taken, but since the testimony has ben taken and I offer this in evidence as Government's Exhibit next in order.

The COURT: It will be received as U. S. Exhibit 14 in evidence.

(The document was marked "U. S. Exhibit 14.")

Miss PHILLIPS: At this time I will ask counsel if he is prepared to offer to the Court a model of the "Silver Palm" drawn to scale, showing an exemplar of her length, breadth, and beam.

Mr. LILLICK: Mr. Ensor informs me that he has in San Francisco [558] an exact model of the "Silver Palm." It is a very expensive model. I think your Honor has seen similar models. If that may be offered in response to this request of Miss Phillips and some arrangement made under which it may be kept subject to the order of the Court and

produced in court, so that we can get it again, we will bring that out.

Miss PHILLIPS: You will remember I offered a model of the "Silver Palm" as an exemplar of her length, breadth, and width, made upon the same scale as the "Chicago," totally for the convenience of the court. I will renew the offer of the exemplar in court of the "Silver Palm" solely for your Honor's convenience. I do not believe that an exemplar of the "Silver Palm" made upon a different scale is going to help your Honor in the same way and with the same convenience as the exemplar that I am offering. I have no objection to counsel offering his exemplar for whatever purpose he sees fit, but it must be apparent to you that it would not serve the same convenience that the exemplar of the "Silver Palm" which I have offered, which is on the same scale as the "Chicago."

Mr. LILLICK: We will have prepared and offered as an exhibit a model of the "Silver Palm" drawn to the same scale that the "Chicago" is drawn.

Miss PHILLIPS: That would be very satisfactory.

Mr. LILLICK: I will only ask that when our model is brought to Court that the other model be taken away.

Miss PHILLIPS: Certainly. The convenience of having two models drawn to the same scale is so apparent that I do not see why there should be any argument about it.

The COURT: You have the assurance of Mr. Lillick that it will be produced.

Miss PHILLIPS: I next want to offer a certified copy of an [559] order of the Superior Court of the State of California issuing special letters of administration to the Bank of America, National Trust & Savings Association, in the Estate of John W. Troy, and I ask that that be marked as U. S. Exhibit next in order.

The COURT: It will be received as U. S. Exhibit 15.

(The document was marked "U. S. Exhibit 15.")

Miss PHILLIPS: I will ask your Honor at this time for an order joining the Bank of America, National Trust & Savings Association as a co-libelant in this suit.

Mr. LILLICK: No objection.

Miss PHILLIPS: My reason for that is that originally I presented the claim in favor of Mrs. Troy, the widow of John Troy and, and her five children, in the name of the United States of America, the United States being the trustee for her. I am convinced that the administrator is the proper party.

The COURT: Counsel says he has no objection, and that will be received as U. S. Exhibit No. 15.

Miss PHILLIPS: I will offer in evidence as U. S. Exhibit next in order a certified copy of the Probate Court of the Commonwealth of Massachusetts appointing Ethel G. MacFarlane administratrix of the Estate of Harold A. MacFarlane.

The COURT: It will be received as U. S. Exhibit No. 16 in evidence.

(The document was marked "U. S. Exhibit 16.")

Miss PHILLIPS: I am going to ask leave of court to present at the time of my rebuttal evidence a certified copy of the order appointing the widow of Lieut. Chappelle administratrix of the Estate of Lieut. Chappelle. I might say that I had such copy, but it has been misplaced, and a thorough search of the office has not found it, so I wired Mrs. Chappelle to send a copy of it when it is received. [560]

The COURT: We will have to wait until the copy arrives before it is marked.

Miss PHILLIPS: Counsel has asked one or two questions for points of information, which we are supplying him, and I would ask leave to have Lieut.-Commander Dees take the stand to answer one or two questions that counsel has asked, and one further question that I would like to ask which I believe the record is not complete on, but it is a matter of immaterial consequence, and if counsel should object to it on the ground that Lieut.-Commander Dees has been present throughout the trial I would not have any objection to withdrawing the question.

Mr. LILLICK: I have no objection to any testimony on that ground that Lieut.-Commander Dees may give.

RANDAL E. DEES,

Called for the United States, sworn.

Miss PHILLIPS: Q. Will you please give your full name?

A. Randal E. Dees.

Q. What is your station, please?

A. Lieut.-Commander, United States Navy, attached to and serving on board the U. S. S. "Chicago" as gunnery officer.

Q. You were asked to find out what the record was of *a named* Hanes, to whom previous witnesses have referred. What were the circumstances of his leaving the "Chicago"? Have you a record upon that?

A. I consulted the records kept in the executive office of the U. S. S. "Chicago," that is the office that handles all matters of personnel, transfers, discharges of enlisted men, and I found the following record: "Hanes, Dallas, Machinist's Mate, Second Class, Date of Enlistment 19th of January, 1930; Received on board the "Chicago" on February 2, 1932. Discharged from Navy on the 17th of January, 1934, at Mare Island, California, with an [561] honorable discharge, by reason of expiration of enlistment."

Q. A question was asked by counsel of Mr. Colton to give the whole weight of the revolving mechanism of each of the "Chicago's" propellers. I believe that was the question asked. What did you find out as to that?

(Testimony of Randal E. Dees.)

A. These records were not on board the vessel. If it is necessary for the Court to have this information, that information can be obtained from the builders, the United States Navy Yard at Mare Island.

Miss PHILLIPS: I might say that that record will be here by Tuesday.

Q. Now, there is a question I want to ask the witness: "Do you know in what waters the "Chicago" operated during the four months preceding the collision?"

A. I can answer from the 2nd of July, 1933, to my own knowledge; I joined the ship on that date at Bellingham, Washington, and thereafter we operated out of Puget Sound and in Pacific Waters between there and the area of San Diego, making the ports of San Francisco and San Pedro.

Q. I have one more question to which counsel has the privilege of objecting: Have you ever examined the orders of the engineering department of the "Chicago" referring to the privilege or right in any way for machinist's mates not on duty to be in the engine-room when they are off duty?"

A. Last night on board the "Chicago" I examined the orders of the engineering department issued by Engineer Officer Lieut.-Commander Colton and only in respect to this one point, and I found no order barring any men not on watch from the engine-room.

Miss PHILLIPS: That is all.

(Testimony of Randal E. Dees.)

Cross Examination.

Mr. LILLICK: Q. How long back did you go over the orders that you examined of Mr. Colton?

A. As the "Chicago" has only been in commission for about three years the list of orders were not [562] very extensive, and I looked over the orders from the beginning.

Q. In other words, it was not just the orders applicable to the last few days, but it was a general order book?

A. I began with the first order issued from the date of commission of the ship in that department.

Q. It is not customary, however, is it, to have men off duty in the engine-room, or do you know of that?

A. You were asking me about custom. I would say I know nothing against men being in the engine-room when off duty unless the engineering officer of that ship should so prohibit. If I were the engineer-officer I would be very much delighted for a man to show enough interest in his duty to go down there in the engine-room and do work when not on watch.

Q. As a matter of actual practice, do you deem it to be concomitant with efficiency to have throttle men talk to other men while they are engaged in the performance of such duties as come to them when an emergency exists? I am simply asking a simple question of efficiency.

(Testimony of Randal E. Dees.)

A. I can imagine many cases where talk would not interfere, and in the case of an emergency if a second man were standing by or even were in the immediate neighborhood and could come to the assistance of the man there that he might expedite and make more quick a response to the orders, even if it involved some amount of talk to the man in order to co-ordinate the joint efforts of the two men.

Q. That is assuming that they are aiding each other in the duties. I am discussing a situation where a man is there and he engages in conversation, having nothing to do with the ship, and asking you whether, in your opinion, that is in the interest of efficiency.

Miss PHILLIPS: I think we are going on to an academic discussion. There is no testimony in this case, either directly or indirectly, indicating that any such situation has existed, upon which [563] counsel is now asking the witness, and I object to the the question as immaterial.

Mr. LILLICK: I disagree with Miss Phillips that there is no testimony in the case even indirectly involving men being in the engine-room talking about other things.

The COURT: I think your question answers itself. Of course, if a man's attention was detracted from his duty it would not be proper.

Mr. LILLICK: I think so.

Q. Commander, while you were looking up Hanes' discharge did you look up the other man's discharge?

(Testimony of Randal E. Dees.)

A. No, I did not look it up, because I was only asked for the discharge of Hanes.

Mr. LILLICK: That is all.

Miss PHILLIPS: That is all.

Mr. LILLICK: Have you a copy of the demand that you served upon us for log-books?

Miss PHILLIPS: The demand for logs has been complied with, as far as I know, except the bell-books. I think the other logs were handed over by you the day before yesterday. Might I say that I did not take the formality of advising the Court that we had complied with Mr. Lillick's demand for logs. I believe it was complied with the last week in February, but I would like the record to show I assumed it was not necessary, because if he did not get the logs it would then be called to the attention of the Court.

Mr. LILLICK: In response to a demand for the production of the log-books of the "Silver Palm," a notice was served upon us January 26, 1934, calling upon us to produce "All original deck logs of the "Silverpalm" in the possession or under the control of the Silver Line, Limited, from the time ownership of said ves- [564] sel was acquired by the Silver Line, Limited, and which show her operations during said time to the date of said collision, or, in the case of legal impossibility to produce said original deck logs, to produce duly certified copies of them or photostatic copies of them.

“All originals engine room log books of the “Silverpalm,” in the possession or under the control of the Silver Line, Limited, from the time ownership of said vessel was acquired by the Silver Line, Limited, and which show her operations during said time to the date of said collision, or, in the case of legal impossibility to produce said original engine room log books, to produce duly certified copies of them or photostatic copies of them.

“All original bell books or maneuvering books of the “Silver Palm” in the possession or under the control or the Silver Line, Limited, from the time ownership of said vessel was acquired by the Silver Line, Limited, and which show her operations during said time to the date of said collision, or, in the case of legal impossibility to produce said original bell or maneuvering books, to produce duly certified copies of them or photostatic copies of them.

“Any other original records or books of the “Silver Palm” in the possession or under the control of the Silver Line, Limited, from the time ownership of said vessel was acquired by the Silver Line, Limited, and which show her operations during said time to the date of said collision, or, in the case of legal impossibility to produce said original records or books, to produce duly certified copies of them or photostatic copies of them.

“Schedule of the SS “Silver Palm” for her contemplated voyage from the Port of San Francisco to the port of New Orleans, Louisiana, and there-

after, to ports in South Africa, as described in the petition for limitation of liability, in the pos- [565] session or under the control of the Silver Line, Limited.”

We sent to the owners in London, and they forwarded to us something over 100 original deck logs and original engine-room logs, and notified the Government, and those have been at our office since and subject to the inspection of the Government and have been examined.

Miss PHILLIPS: Those are the log-books in the limitation case. The log-books have nothing to do with the collision case.

Mr. LILLICK: So that there may be no misunderstanding on the part of the Court, certain of the testimony that has been introduced before the Court or in the depositions will have a bearing on the limitation proceeding. The understanding between counsel is, at least it is my understanding, Miss Phillips, that either of us shall have the right to use any of the testimony in the collision case where it may be pertinent to points that may be involved in the limitation proceeding.

Miss PHILLIPS: So stipulated.

Mr. LILLICK: These engine log-books and deck log-books, as I say, have been examined by representatives of the Government, and they are at our office subject to call.

Miss PHILLIPS: I will point out with the exception of the bell books and also as to the schedules.

Mr. LILLICK: The demand was couched in such language as to call upon us in case of legal impossibility to produce originals to produce certified copies, and we cannot produce the bell books, and I have offered in evidence an affidavit.

Miss PHILLIPS: This affidavit shows what I have already stipulated to, that the original deck and engine-room log-books have been produced. We do not need to talk about that; the engine-room bell-book of the "Silver Palm" for the particular voyage, counsel [566] has produced that. The affidavit goes on to say that if there are any other bell-books the "Silver Palm" has them itself. This affidavit is sworn to on the 27th of February, 1934. I do not consider that affidavit a sufficient explanation of why those bell-books of the "Silver Palm" have not been produced. My position is I noticed counsel to produce these bell-books in January, I do not remember the exact dates but the record will show, and an affidavit is made on the 27th of February by somebody in London that they have not the bell-books there, and if they have them the "Silver Palm" still has them on board. I do not consider that a sufficient explanation of why they are not produced.

Mr. LILLICK: I will offer this affidavit.

Miss PHILLIPS: I object to that. I will stipulate that counsel has produced the original deck logs that I have asked for, the engine-room logs and the bell book of the particular voyage, but he has not

produced the other bell-books and he has not given a sufficient reason why he has not.

Mr. LILLICK: It was my recollection that in one of the notices there was a demand that if we were unable to produce any of the records demanded that we furnish a reason for it. I offer by an affidavit from Stanley Miller Thompson, sworn to by him as a director of the Silver Line, Limited, to show that the company has in its possession or power all the original deck and engine-room log books of the "Silver Palm" covering the period from her first voyage to the 25th day of October 1933; the engine-room log-books of the "Silver Palm" covering maneuvers from 11th October, 1923, to 25th October, 1933; the engineer's scrap log-book commencing noon September 30th, 1933 to October 24th, 1933, and the scrap log-book No. 16, commencing August 31, 1933, and ending 25th October, 1933, and the schedule of the "Silver Palm" for her contemplated voyage [567] from San Francisco to New Orleans and thereafter to ports in South Africa.

Further, I offer to prove by this affidavit of Stanley Miller Thompson that they have not in their possession or power any other original bell-books, scrap logs, or maneuvering books of the "Silver Palm" and have no knowledge of whether any such exist, but if the same exist they are on board the "Silver Palm" which vessel is at present at Calcutta. I offer to prove that by this affidavit and offer it in evidence.

Miss PHILLIPS: I object to it on this ground, the affidavit, itself, shows by its own terms that it is an insufficient explanation of failure to comply with the notice to produce.

The COURT: I do not know that I understand the matter. Perhaps the issue is one that I have not met in admiralty before. I do not see, however, any reason why he could not present that and have it received, but that does not mean that it will be received as an explanation for the absence of the logs. It can be received as showing what was offered. I don't know of any rule that I should not receive it.

Mr. LILLICK: I propose to follow it up. I am laying a foundation for something else that I am proposing to do in a few minutes.

The COURT: I do not understand. I am in a position to refuse to receive it.

Miss PHILLIPS: I withdraw the objection to the offer. If Mr. Lillick can't make the explanation for the failure to produce I have no desire to take advantage of him.

Mr. LILLICK: Do not put it on the ground of putting us in an embarrassing situation.

The COURT: In other words, I am not receiving it as necessarily an explanation but I am receiving what is offered by Mr. Lil- [568] lick as in part an explanation for the failure to produce. It will be received as Respondent's Exhibit 12.

(The document was marked "Respondent's Exhibit 12.")

Mr. LILLICK: The only books that I know of that have not been produced are the bell-books and the maneuver book.

Miss PHILLIPS: We have no schedules.

Mr. LILLICK: The schedule I now hand to Miss Phillips.

The COURT: If these books are on the "Silver Palm" why couldn't they be cabled for?

Mr. LILLICK: We have done it. The "Silver Palm" was at sea; we cabled for them and we are expecting a reply from the ship today. The vessel was to put into Singapore today, and if a cable comes that the bell-books are aboard they will be here in time to be considered by the Court. If they are not on board there will be a witness who will testify with respect to it. What I am trying to show is——

The COURT: You are trying to show good faith on the part of your office.

Mr. LILLICK: To show diligence on our part to give Miss Phillips all that we have. I have handed Miss Phillips the schedule demanded in the notice to produce, but I think the schedule will need explanation.

Miss PHILLIPS: Yes, this covers other months.

Mr. LILLICK: That is why I say I think it will need explanation.

Miss PHILLIPS: Both of these cover May, June, July and August. I do not accept these as a compliance with the notice. Unless the other infor-

mation is given I do not want to be understood that I am accepting these.

Mr. LILLICK: What other explanation do you need? [569]

Miss PHILLIPS: I want what I have asked for. I have asked for the "Silver Palm's" schedule of her voyage on which she was engaged in October, 1933, and I have here a schedule showing her schedule for the months of May, June, July and August, 1933. Unless something more is added that is certainly not a compliance with the notice to produce. I want to call attention that my notice to produce these records is dated January 24, 1934, which is two months ago.

Mr. LILLICK: Are you making any point that this is putting you at a disadvantage with respect to your case?

Miss PHILLIPS: Of course, I wanted this schedule some little time ago; we began our examination of the books on the 12th of March, the day before the trial began. I thought the schedule would be produced at that time. It did not make any great difference, it has not put me to any particular disadvantage, but I have not yet got the schedule which I asked for.

The COURT: If you have finished with the offer let us proceed.

Mr. LILLICK: I will call Captain Ensor.

THOMAS A. ENSOR,

Called for the Silver Line, Limited, sworn.

Mr. LILLICK: Q. Captain Ensor, I hand you the schedules which a few moments ago were handed to Miss Phillips and ask you to read from them the schedule of the steamship "Silver Palm" for the contemplated voyage from the Port of San Francisco to the Port of New Orleans, Louisiana, and thereafter to ports in South Africa.

A. The voyage referred to commenced at Vancouver, October 17, San Francisco sailing October 21, arrival at Cape Town December 13, Port Elisabeth December 15, East London December 16, Durban December 17, Lourenco Marquis December 20, Bombay January 5, Madras [570] January 14, and Calcutta January 18.

Miss PHILLIPS: May I look at that? Will you pick out the dates on which the "Silver Palm" sailed from Vancouver on this voyage?

A. The voyage commences at Vancouver; these two are the dates of leaving from the respective ports. These are the arrival at the ports. Now, the other sheet gives the gulf arrivals. You see, two schedules are published, one for the ships on the Gulf and one for the ships on the Pacific Coast, so the entire schedule is on the two sheets.

Miss PHILLIPS: I think I am quite wrong in my objection. I would like to offer this in evidence as Government's Exhibit next in order.

The COURT: It will be received as U. S. Exhibit 17.

(The document was marked "U. S. Exhibit 17.")

(Testimony of Thomas A. Ensor.)

Miss PHILLIPS: I had planned to call Mr. Ensor as a witness on rebuttal. Might I question him at this time on the point I wish to question him on as to records?

Mr. LILLICK: No objection.

Miss PHILLIPS: All I want to ask you, Captain Ensor, is there were tendered to us last week quite a number of log-books of the "Silver Palm." Did those logs come to you from the owners in London?

A. Yes.

Q. There also came reports, I would say, from the captain from port to port, that is a report apparently indicating that at certain ports he would send to his owner a report of the voyage to that date in port, and then subsequent dates: Is that correct?

A. They are what are known as abstracts of logs. The logs are kept on the vessel until the completion of the voyage, but in order to keep the owners advised with respect to what the ship actually did abstracts are sent at frequent intervals. [571]

Q. Frequent intervals?

A. Yes.

Q. That was the purpose of these abstracts?

A. Yes.

Q. And they came to you from the owners?

A. Yes.

Miss PHILLIPS: That is all.

Mr. LILLICK: Miss Phillips, might I ask whether inadvertently I have failed to produce anything but the bell-books and the maneuver books, which it is my understanding are those that may be on the "Silver Palm"?

Miss PHILLIPS: I think I have already said that you had produced the various deck logs, and I think the engine-room logs, and the bell-books or maneuver books had not been produced for other than the particular voyage in question.

Mr. LILLICK: We offer the depositions of Donovan M. Pitt, assistant engineer on the "Silver Palm"; the deposition of Jeffrey Newhours, second engineer of the "Silver Palm"; the deposition of John Oswald Tough, junior fourth engineer on the "Silver Palm"; the deposition of Osman Bin Puteh, bow lookout of the "Silver Palm"; the deposition of Maharick Bin Latip, helmsman of the "Silver Palm"; the deposition of George Ellis Stanley, third officer of the "Silver Palm," the deposition of Bernard Thomas Cox, captain of the "Silver Palm," the deposition of Selwyn Norman Capon, captain of the steamer "Albion Star," the deposition of James Roy Harding, the first mate and chief officer of the "Albion Star," the deposition of Irik Irvine, fourth officer of the "Albion Star," and the testimony of Chief Engineer of the "Silver Palm," G. H. Low, taken before the Naval Court of Inquiry, commencing on page 149 and ending on page 155, which it was understood when that testimony was taken that if either of us cared to offer it in evidence it might be offered in evidence.

Miss PHILLIPS: That is correct. He testified before the Naval [572] Court of Inquiry, and it was stipulated at that time that that testimony might be placed in evidence.

The COURT: It will be received.

Mr. LILLICK: I will hand the reporter the testimony so that it may be copied into the record at this point. That covers all of the depositions I have to offer.

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(The testimony of

G. H. LOW

referred to is as follows:) [573]

“Examined by the Judge Advocate:

“1. Q. State your name, occupation, and residence.

“A. G. H. Low, chief engineer, 1096 Shields Road, Newcastle-on-Tyne, England.

“2. Q. Were you chief engineer of the M. S. ‘Silver Palm’ on the 24th of October, 1933?

“A. Yes, sir.

“3. Q. How long had you been serving as chief engineer on the ‘Silver Palm’?

“A. Since July of this year.

“4. Q. Are you a qualified engineer?

“A. I am, yes.

“5. Q. How much experience have you had with Diesel engines?

“A. Some nine years.

“6. Q. Are the Diesel engines on the Silver Palm air starting?

“A. Yes.

(Testimony of G. H. Low.)

“7. Q. Is air from the same air bottles used to start the engines as air used to sound the whistle? Or are they different?

“A. The same air bottles, yes.

“8. Q. What are the size and capacity of these bottles?

“A. One hundred sixty-five cubic feet each—three bottles.

“9. Q. What is the pressure of these bottles?

“A. Six hundred pounds to the square inch.

“10. Q. Do you mean 165 cubic feet per bottle or total for the three bottles?

“A. Per bottle. That would be 495 total.

“11. Q. Will you tell the court the length and diameter of the air bottles?

“A. Twelve feet 8 overall length, and 4 feet 3 inside diameter—cylindrical bottles.

“12. Q. Did you have a flywheel on your main engine, and if so what is the size and weight of the flywheel?

“A. I could not give you that definitely—only approximately.

“13. Q. Give me an approximation then of the size.

“A. The flywheel will be in the neighborhood of about 7 feet [574] diameter. And the weight? Of course it would only be a very rough guess if I gave you that now; about 15 tons.

“14. Q. Your scavenger air for the main engines is taken right off of a cam shaft to your main engines?

(Testimony of G. H. Low.)

“A. Driven direct from the crank shaft of the main engines, yes.

“15. Q. When you stop your main engines (your main engine is going ahead), you put your controller on ‘Neutral’?

“A. Yes.

“16. Q. This cuts your oil, does it not?

“A. You shut your oil off straight away, first, and then put your main control in the ‘Stop’ position.

“17. Q. When you put your main control in the ‘Stop’ position does this release the compressor on the engine?

“A. No, it has nothing to do with the compressor at all. It merely cuts the fuel off and cuts the fuel valves out of operation.

“The Court asked the witness to repeat his answer.

“A. You cut the fuel off of the engine, and the control that takes all the fuel valves out of operation.

“18. Q. Then with the engine turning over, there is still a compression in each cylinder at each stroke?

“A. Yes, you still have the compression there.

“19. Q. There is no release to that?

“A. No.

“20. Q. Does this compression tend to stop the engines?

“A. Yes, it acts as a brake.

(Testimony of G. H. Low.)

“21. Q. How long does it normally take to stop the engine from going ahead at 108 revolutions per minute? To bring it to a stop?

“A. That is a very difficult thing to say. It may take a minute, or a little longer. It varies with the conditions—of sea, wind, and that sort of thing.

“22. Q. The momentum of the flywheel would tend to keep the engines turning over, would it not, after the fuel is cut?

“A. Yes, all flywheels have that tendency. [575]

“23. Q. And also the propellers would tend to keep turning the engine over?

“A. Yes . . . Well, you have the reverse effect, with the water dragging the propellers around they are putting in work in the engines, whereas normally the engines are putting work in the propellers.

“24. Q. Yes, I understand that. But as long as the ship is making way through the water, the propellers would tend—

“A. Yes.

“25. Q. —as long as your engines are turning over in the ahead movement, there is no way that you can give them any starting air to stop them and reverse them, is there?

“A. No, they should be stopped before you reverse them—before you put the fuel on the ‘Astern.’

“Cross-examined by counsel for Captain Kays and  
Lieutenant Minter:

“26. Q. Have you ever had occasion to test or experiment with the engines on the *Silver Palm* to

(Testimony of G. H. Low.)

determine how long it takes to reverse the engines from a speed of 108 revolutions ahead?

“A. No, we have never had occasion to make a quick reversal from those revs.

“27. Q. Have you any knowledge of how long it would take to reverse the engines of the Silver Palm from 108 revolutions per minute ahead?

“A. Why, I could not say definitely how long it would take. It depends greatly on different conditions of loading and trim and seaway.

“28. Q. The engines of the Silver Palm were going ahead at 108 revolutions per minute: Before they could be reversed it is necessary to put the controls to the ‘stop’ or ‘Neutral’ position, is it not?

“A. Yes, to bring them to ‘Stop.’

“29. Q. And before those controls could be engaged in ‘Reverse’, it is necessary that the propeller shafts cease turning from ‘Ahead’? is that correct?

“A. Essentially that is correct; but actually the controller governor could be put in the ‘Astern’ [576] condition, but the fuel would not be put in there before the engines were stopped.

“30. Q. So, if the controls were put in the ‘Reverse’ position, it would not have any effect on the engines?

“A. No.

“31. Q. And you do not know how long it would take for the engines to idle down to a stop from 108 revolutions ahead?

“A. I could not give a definite figure on that.

(Testimony of G. H. Low.)

“32. Q. Were you in the engineroom of the Silver Palm prior to the collision on the 24th of October?

“A. No, not just prior to it. I was going down when I heard the telegraph ring.

“3. Q. Which ring do you refer to?

“A. The first ring, I think it would be.

“34. Q. When the Silver Palm collided with the Chicago were the engines actually in reverse or not?

“A. No, they were in ‘Stop’ position.

“35. Q. By that, you mean the controls were at ‘Stop’?

“A. At ‘Stop’, yes.

“36. Q. The engines were still going ahead?

“A. Very slowly, but stopped immediately with the collision.

“37. Q. Immediately after the collision?

“A. Yes.

“38. Q. Do you know what revolutions they were making ahead before the collision?

“A. No, I could not tell you that. . . . It would be a pretty low rate of revolutions; the revolutions drop very quickly when the fuel is shut off.

“39. Q. But you are unable to tell us how long it takes to stop the engines from 108 revolutions?

“A. Not definitely. It may take a minute, or somewhat longer. I could not say a definite figure. I don’t think anyone can.

“40. Q. Have you ever discussed with the Master of the Silver Palm, prior to the collision, the

(Testimony of G. H. Low.)

kind of engines that you had on the Silver Palm and their inability to be promptly reversed? [577]

“A. No, I never discussed that in that light with him.

“41. Q. Was he familiar with the fact that it takes a relatively long period of time to reverse the engines of the Silver Palm from 108 revolutions ahead?

“A. I really could not say. I should think he would, though.

“42. Q. If the bridge signals the engineroom, ‘Full speed astern, both engines,’ and immediately thereafter again signals the engineroom, ‘Full speed astern, both engines,’ what does that indicate?

“A. Urgent—the record full speed astern.

“43. Q. Would the urgency of the situation make any difference in the engineroom in answering the first signal or acting upon it?

“A. No, the first signal would be answered right away. But in occasion like such as that—in case of emergency, where a thing has got to be done quickly as possible at any cost, then they give a double ring so that if there are any chances to be taken you are quite entitled to take them.

“44. Q. Did you say ‘chances taken’?

“A. Yes. It is the usual marine procedure that on any type of engine or ship—say on a turbine, if you have got a double ring astern you can put all the steam on the turbine astern and risk an accident.

(Testimony of G. H. Low.)

“45. Q. Was that done on the 24th?

“A. Yes, everything was done promptly.

“46. Q. Do you know whether or not an attempt was made to put the engines in reverse prior to the collision?

“A. No, there had been no attempt really made. In fact, I believe there were further movements on the telegraph after the collision.

“47. Q. Have you discussed the collision with the Master of the *Silver Palm* since its occurrence?

“A. No, I haven't gone into the thing with him at all.

“48. Q. Have you heard him make any comments regarding the circumstances of the collision?

“A. No, nothing. [578]

“Examined by the Court:

“49. Q. You stated that the receipt of the emergency backing signal authorizes you to use every effort to obey the signal?

“A. Yes.

“50. Q. Would the execution of the signal, ‘Emergency, back, full,’ have been expedited had you admitted air to your cylinders? To start the engine backing?

“A. No, it would not—quite the reverse! There are features with the Diesel engine running ahead and you have the gear in the astern position and give her fuel, she is liable to continue running ahead.

(Testimony of G. H. Low.)

That's the case inevitably with all Diesel engines; she would continue running ahead.

"51. Q. Are these engines Diesel or semi-Diesel?

"A. Well, the makers claim Diesel; but they are of similar class to semi-Diesel.

"52. Q. In other words, you have a heating element in your cylinders to heat the oil for combustion in advance to the heat due to the compression of the air in the cylinders?

"A. Well, we have a higher circulating water temperature, which has that effect.

"53. Q. It has that effect?

"A. Yes.

"54. Q. Well, is this heating element just the general heat of the cylinder walls or the extra heat in some portion of the cylinder walls, or cylinder head?

"A. Well, we allow the jacket water to rise to a certain figure and keep it there.

"55. Q. How long have you been on the Silver Palm?

"A. Since July of this year.

"56. Q. Have you served on sister ships of the Silver Palm in that line?

"A. No, not on a sister ship. On a single screw type of vessel, with a bigger powered engine.

"57. Q. Have you ever been through the Panama Canal with a single screw type?

"A. No, I have never been through the Panama Canal.

(Testimony of G. H. Low.)

“Recross-examined by counsel for Captain Kays  
and Lieutenant Minter:

“58. Q. Where were you at the time of the col-  
lision? [579]

“A. Just on top the engineroom—just going  
down.

“None of the parties to the inquiry desired fur-  
ther to examine this witness.”

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The COURT: We will take a recess now until  
two o'clock p. m.

(A recess was here taken until two o'clock  
p. m.) [580]

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Afternoon Session.

JAMES BARCLAY,

Called for the Silver Line, Limited, sworn.

Mr. LILLICK: Q. Mr. Barclay, where are you  
at present employed?

A. The Moore Dry Dock Company, Oakland.

Q. In what capacity?

A. In the capacity of Naval Architect.

Q. How long have you been with the Moore Dry  
Dock Company?

A. This time fifteen months; previously, from  
1920 to 1923.

Q. What was your experience before going to  
Moore's? Will you start with your earliest experi-  
ence and then give your experience through your

(Testimony of James Barclay.)

life up to your present position of naval architect?

A. I served an apprenticeship for six years as ship's draftsman and after coming out of my apprenticeship I worked with the Fairfield Shipbuilding Company, Glasgow, Newcastle-on-Tyne, Campbell Laird, assistant chief draftsman. In 1916 I entered the services of Skinner & Eddy Corporation as naval architect to design some vessels that they wanted for their own use that was known as the 8800-ton ship which was afterward adopted as standard by the United States for war service. From 1916 to 1920 I was with the Skinner-Eddy Corporation, and then was employed by the Moore Shipbuilding Company from 1920 to 1923.

Q. During your years of experience have you had to do with repairs made upon vessels that had been involved in collisions?

A. Oh, yes, that is part of the work, every-day work of a shipyard.

Q. And as to the period during which you were designing vessels, you were also in positions where the yards were constructing vessels?

A. Yes.

Q. And occupied what position in that respect?

A. The naval architect in a shipbuilding company establishment has [581] charge of the drawing office and all of the technical work of the institution, and also has an advisory capacity to the foremen and managers in the yard.

Q. Were you with the General Engineering Company, also?

A. Yes.

(Testimony of James Barclay.)

Q. How long were you with them?

A. From 1924 to 1930—six years.

Q. During that time, and while you have been with Moore's, have you been in charge of the repairs made to the vessels that have been repaired by them that have been in collision?

A. Yes.

Q. I hand you three photographs, which we will offer separately later, and will ask you whether you know where those photographs were taken.

A. Yes. These photographs were taken at the behest of the Moore Dry Dock Company when the vessel was on our No. 4 dry dock.

Q. When did the "Silver Palm" come to your drydock No. 4?

A. October 29, 1933.

Q. Was that the drydock upon which she was first taken out of the water after her collision with the "Chicago"?

A. Yes.

Q. I hand you one of these photorgaphs and ask you what that represents, relative to which bow of the "Silver Palm" it is.

A. This is the port bow of the "Silver Palm."

Mr. LILLICK: We offer this photograph as our next exhibit.

The COURT: It will be received as Respondent's Exhibit 13 in evidence. That is a photorgaph of the port bow?

Mr. LILLICK: That is a photograph of the port bow, of the "Silver Palm."

(Testimony of James Barclay.)

(The photograph was marked "Respondent's Exhibit 13.")

Q. I hand you another photograph and ask you whether that was taken on the same occasion, and what it represents.

A. Yes. This is a photograph taken on the same occasion, but from a rather different angle. It is taken at an oblique angle to [582] the bow, which shows not quite perpendicular to the stem, but a few degrees of it.

Q. Which bow?

A. Port bow?

Mr. LILLICK: We offer that as our next exhibit.

The COURT: It will be received as Respondent's Exhibit 14.

(The photograph was marked "Respondent's Exhibit 14.")

Mr. LILLICK: Q. I hand you another photograph of the "Silver Palm" and ask you what that represents.

A. This is a photograph taken on the port side from aft of the damage looking forward on the port side.

Mr. LILLICK: We offer that as our next exhibit.

The COURT: It will be received as Respondent's Exhibit No. 15.

The photograph was marked "Respondent's Exhibit 15."

Mr. LILLICK: Q. I hand you Silver Palm" Exhibit No. 13, and ask you whether you can tell

from that photograph whether the vessel with which the "Silver Palm" came in contact was at the time (Testimony of James Barclay.)

of the contact dead in the water, going ahead, or going astern?

Miss PHILLIPS: That is objected to, the witness not having been shown to be qualified to answer that question.

Mr. LILLICK: If your Honor please, this witness, having had to do with the repair of vessels, his opinion for whatever it may be worth, will be measured and weighed by what the witness' qualifications are.

The COURT: In repairing ships have you been acquainted with at what angles the accident to those ships took place?

A. Yes, to a certain extent.

Q. In other words, you were informed or you made a study of the angle of collision at those times?

A. No, I did not.

Q. Then what do you predicate that opinion upon?

A. Upon the condition of the damage to the "Silver Palm" as I saw it.

Q. You feel that you can do it, as a naval architect?

A. Yes. [583]

The COURT: Of course, I don't know how broad the term "naval architect" is. You take a lawyer, he is supposed to be able to express himself about the law whether he expresses himself, or not;

(Testimony of James Barclay.)

a doctor who is admitted to practice and is licensed may be considered to have the necessary foundation to present a matter. I don't know whether the term "naval architect" is so broad in its scope that a man could be said to be able to give an expert opinion. This man says he has repaired ships and knows something about the nature of the accident. He feels that he is able to express an opinion as to the condition which the wrecked condition indicates. Do you feel that?

A. Yes.

Q. As to the force that must have been applied, is that the idea?

A. Yes.

The COURT: I don't know what the practice is as to foundation in a case of that kind.

Miss PHILLIPS: I don't think he has shown the qualifications.

The COURT: Will you indicate to what dergee he should have them?

Miss PHILLIPS: He has not really given us what a naval architect is supposed to do. He has indicated a naval architect designs ships and in his capacity repairs ships, but when it comes to analyzing forces, amount of forces, and direction of forces, combination of forces, and conflicting forces, I do not think he has shown anything at all. For instance, he says to a certain extent he knows the circumstances under which the vessels that he has repaired were in collision, to a certain extent.

The COURT: Would you like to examine him on the question of his qualifications?

(Testimony of James Barclay.)

Miss PHILLIPS: Yes.

Q. Mr. Barclay, counsel asked you some question, had you had occasion to consider the cause of collisions. Did I understand the [584] question right?

Mr. LILLICK: I did not ask that.

Miss PHILLIPS: I am not sure, I do not remember that, my notes are not very full. Did you understand that to be the question?

A. Will you repeat that, please?

Q. I understood counsel asked you whether or not in the course of your work you had had occasion to consider the circumstances under which collisions occurred, and how the damages that you repaired had occurred. I understood the question to be that in substance.

A. Yes.

Q. And I understood your answer to be yes, to a certain extent.

A. That is right.

Q. What do you mean by "to a certain extent"?

A. Just by observation of the damage to the vessel that came in to be repaired; we can visualize in what manner that damage has been done. It is a matter of experience in shipbuilding.

Q. Have you ever made any experiments to show the effect of colliding bodies such as ships?

A. No.

Q. You have not?

A. No.

(Testimony of James Barclay.)

Q. Then in these collision repairs that you are describing, in which you surmised the circumstances of the collision, were you taking, for example, the statements of officers who had told you the circumstances under which the collision occurred?

A. No, we analyze that from the condition of the ship.

Q. Well, I can see, all of us can see, when a ship comes in with a hole in the side, it is evident that something hit her; all of us can see that; and if she had a great deal of scraping along the side all of us can see there was something scraped her. But what I am getting at is, have you ever had any experience in experiment- [585] ing to see what is the cause that will bring about an action, a specified effect?

A. No.

Miss PHILLIPS: I rest on my objection.

Mr. LILLICK: Q. Mr. Barclay, how many vessels have you seen that have been in collision?

A. Probably 25 or 30.

Q. You have been in charge of plants where those vessels have been brought for repairs?

A. Yes.

Q. And in making those repairs, from your position as a naval architect or superintendent of the yard, have you had to examine closely the character of the repairs?

A. Yes, we always examine the damage on any vessel that comes into the yard; we have to examine

(Testimony of James Barclay.)

the damage on any vessel that comes into the yard; we have to examine it for survey to satisfy the classification societies.

Q. In making these examinations, do you have to take into consideration the question of stresses and strains?

A. No.

Q. In making these examinations do you come to a conclusion with reference to the direction from which the pressure has been exerted against the plates or frames of the vessel?

A. Very often.

Q. Did you, when the "Silver Palm" was on the dry dock over at Moore's, examine her with reference to that?

A. Yes.

Q. In examining her bow at that time did you come to a conclusion as to on which side that bow had been hit?

A. I did.

Q. In the photographs which I showed you can you show me anything from which you can determine from which side the pressure was exerted against that bow?

A. Yes. There was——

Miss PHILLIPS: Counsel is now asking a question beyond qualification. I want to ask more questions before the witness answers.

The COURT: Very well.

(Testimony of James Barclay.)

Miss PHILLIPS: Q. Is it not true that what you have had to do was you observed the damage in a ship and you repaired it? Isn't that your job?

A. That is right.

Q. What effect causes that you were not required to go into?

A. No. [586]

Q. Not at all?

A. Not at all.

Q. Your job was to repair the damage that was before you isn't that correct?

A. Yes.

Q. And do a good job of it?

A. Yes, that is right.

Q. When it came to analyzing all of the forces that causes that, that was not any of your business?

A. No.

The COURT: What I understand you are trying to say is that some force had been applied whereby it was folded in a certain way?

A. Yes.

Q. You are not in a position to say whether it was folded in that way by the angle of the blow, or it was thrown that way by a moving object: You are not going that far in your testimony?

A. No.

Q. In other words, you are going to say what you found in the damage, and there was some force, no matter what produced it, that twisted it in a certain way?

(Testimony of James Barclay.)

A. I have a definite opinion as to the reason for it.

Q. In other words, you are going to go even farther than tell what you found there as far as folding is concerned, by colliding against a moving object, or whether it was going into a non-moving object?

A. Yes.

Mr. LILLICK: We have a right to have his opinion with respect to the event no matter what that opinion may be worth.

Miss PHILLIPS: I do not object to the witness testifying as to the visible things he saw, but when it comes to stating the causes of the things he saw, he has certainly shown by his own statement not to be qualified to give the causes. In other words, he has made a study of effects and, under his own statement he has never intended to make a study of the causes.

The COURT: I do not know whether there are two theories here, or not. I can imagine that an angle of a blow might bend a bow. [587] and on the other hand I can imagine a force that would tear it around. Of course, I presume that is a matter of expert testimony under the facts of the case. Whether this witness can go far is a question. I think up to that point he has a right to testify to what he saw, and there was a force applied, and whichever way it was applied the question is the application of the forces. I have no idea as to

(Testimony of James Barclay.)

whether he can testify whether the blow came in a certain angle. Do you feel that you have had experience enough so as to testify as to whether that was due to the other object moving or the angle at which there was impact?

A. Well, the only thing that I could say—

Q. (Interrupting) You could not go that far?

A. No.

Q. If you cannot go that far I do not see you cannot tell—you can say some force bent something in a certain way, that is all?

A. Yes, that is all.

Q. In other words, you can say from the physical condition of that object that a force in a certain direction produced that result?

A. That was my intention.

Q. But you are not to go into that further point that I have mentioned?

A. No.

Q. In other words, you are not going to endeavor to say whether it was a moving object or a non-moving object that was struck. You see the situation. Of course, up to that point, that is the only question I have about you in my mind, as to whether you can testify as to that point, unless you say that you have qualifications to answer that particular point, because sometimes that force might be produced in two different ways.

A. I agree with you.

(Testimony of James Barclay.)

Mr. LILLICK: Q. Bearing in mind what the Court has just said, and the limitations put upon your testimony, will you tell us from which direction the force was applied to the bow of the "Silver Palm", according to the direction shown in that photograph? [588]

Miss PHILLIPS: I do not believe that comes within the limitation. That is going back to analyzing the cause. The witness has said he can analyze the effect and explain what he saw, but when it comes to going back to the cause of what he saw he cannot testify.

The COURT: I suppose he can testify that the bow was bent over to the left.

Miss PHILLIPS: He can say the bow was crushed over to the left, yes.

Mr. LILLICK: May I have the question read?

The COURT: Read the question.

(Last question repeated by the reporter.)

Mr. LILLICK: Q. I said to follow the Court's limitation and tell us from which direction the force had been applied.

A. According to the photograph, the force was applied to the starboard side, the starboard bow of the "Silver Palme," which was crushed in and the port bow was bulged out.

The COURT: Q. In other words, the stem was turned over considerably.

Q. It was buckled?

A. It was turned over to port approximately five feet, I should say.

(Testimony of James Barclay.)

Mr. LILLICK: Q. You have given your answer from an examination of Silver Palm Exhibit No. 13.

A. There is another photograph that shows the side.

Q. I show you Silver Palm Exhibit 14 and ask you to indicate to us—will you put it on the desk—where, if at all, on that photograph there appears evidence that you have spoken of of the “Silver Palm’s” bow being moved over from the starboard side to the port?

A. This is the starboard side of the vessel, and these are the bow plates which have been turned over, and the stem, instead of being in the center, here, the stem was broken at the [589] 25-foot line and pushed over approximately five feet off of the center, and the shell plating on the port bow was torn away from the frames until it was held by the collision bulkhead about 25 feet at the center line—it shows that the force came from starboard to port.

Miss PHILLIPS: I want to move to strike out the last sentence, “It shows that the force came from starboard to port.” That is directly against the ruling of your Honor.

The COURT: Q. It came from the starboard angle, didn’t it?

A. Yes.

Q. You don’t know what the angle was?

A. No.

(Testimony of James Barelay.)

Q. The angle was, in your opinion, that it came around from the starboard side?

A. From the starboard side to the port side.

Q. Of course, from the starboard to port means absolutely across, like bending right over, but it came at an angle of some kind?

A. Yes.

Mr. LILLICK: Q. Looking at the bulge on the port side of the "Silver Palm," indicated on Respondent's Exhibit No. 15, have you any deduction from that as to from which side the force came that caused that bulge on the port side?

Miss PHILLIPS: I renew my objection. Counsel is asking the witness to make inferences as to causes directly against the ruling of the Court.

Mr. LILLICK: I do not understand the ruling of the Court to be anything but that the witness has a right to tell us from which direction that force came, saying nothing about the cause, but from which direction the force came. I understood that to be the court's ruling.

The COURT: He was not giving the angle, but just giving the general direction, in other words, from the standard angle or port angle. [590]

Mr. LILLICK: May I have the question read back?

(Question read by the reporter.)

Miss PHILLIPS: I think that requires going into analysis of the forces.

The COURT: I will allow the question as to whether the force was from the starboard or from the port.

(Testimony of James Barclay.)

Miss PHILLIPS: May I have an exception.

A. The force was from the starboard side.

Mr. LILLICK: Q. Why is that?

A. Because the stem was turned right around and the starboard side was crushed in, whereas the port side was bulged out.

Mr. LILLICK: That is all.

#### Cross Examination

Miss PHILLIPS: Q. Do you know at what point the "Silver Palm's" bow fetched up at the "Chicago"?

A. Do you mean the amount of penetration?

Q. No, my question is not clear. Do you know the physical object against which the "Silver Palm" struck, that is, the point at which she stopped—have you any idea of what it was?

A. Not definitely.

Q. If the evidence were to show that the "Silver Palm" struck near the forward turret armor plate of the "Chicago", the bow of the "Silver Palm" struck against this tremendously heavy turret almost at the very angle of the turret—Let me show you on Model Exhibit 1. You are to imagine now that this object which I am pointing to is the forward turret of the "Chicago" and that the "Silver Palm" struck against the corner of that turret, this tremendously heavy turret, would that not account for the damage?

A. No, in my opinion I think that the bow of the "Silver Palm" was damaged and was flat when it hit that turret. [591]

(Testimony of James Barelay.)

Q. If the stem of the "Silver Palm" struck the "Chicago" at an angle of 40 degrees, if it had struck right over here, struck the armor plate, with the "Chicago" dead in the water, wouldn't that have thrown the "Silver Palm's" stem to port?

A. No, I do not think so.

Q. You do not think that would explain anything of that sort?

A. No.

Q. Maybe we can illustrate better by a diagram.

The COURT: Might I ask if there is a picture of the starboard side of the "Silver Palm"?

Mr. LILLICK: Yes, your Honor.

Miss PHILLIPS: What I am getting at is this: You are to think of the "Silver Palm's" bow as striking here, fetching up against, you might say, on an angle of a tremendously heavy turret, striking at an angle of approximately 40 degrees. You observe do you not, that in this marked black area the damaged part stops there, do you not?

A. Yes.

Q. This damaged black area represents an exact physical replica in the portion to scale, of course, of the damage to the "Chicago."

A. Yes.

Q. Would you say that the starboard side of the "Silver Palm" hit against this turret?

A. No, in my opinion, no. I think the damage was done before the "Silver Palm's" bow entered so far into the ship.

(Testimony of James Barclay.)

Q. You are just guessing now, aren't you?

Mr. LILLICK: Pardon me, the witness was about to say something else.

Miss PHILLIPS: Go ahead.

A. I am almost certain that the damage would have been done, the whole stem of the "Silver Palm" was practically flattened when it went through the shell, and then it was just a matter of [592] weight pressing it out.

Q. As a matter of fact, you don't know the cause of the pressure inside of the "Chicago," do you?

A. No, I have never been inside.

Q. You have never seen any pictures of it?

A. Oh, yes, I saw a picture.

The COURT: Q. Do you think the angle of impact between these two vessels made by projecting this, the force came this way and struck at that angle so as to have a sliding motion?

A. I do not think so, unless both vessels are moving.

Q. Don't you think that could have caused that damage?

A. To turn that bow to that extent I think both vessels would have to be moving.

Miss PHILLIPS: I am going to show you a couple of photographs here, one of these, the first of them I am showing you, is U. S. Exhibit 3-A, which is the forward end of the "Silver Palm." Do you not agree with me that this little line coming right along here represents the very forward part of the ship at the stem?

(Testimony of James Barclay.)

A. Yes, I think it does.

Q. I am now referring to U. S. Exhibit 3-E, and U. S. Exhibit 3-D. Wouldn't you agree with me that the character of damage shown on these two photographs is substantially the same?

A. In what way do you mean?

Q. Well, looking at it, doesn't it seem to you to look just about the same sort of a general upheaval there, a crushing and smashing? Do you see any substantial difference in those two photographs?

A. Is this the bow of the "Silver Palm"?

Q. I am not telling you. I am asking you to compare these two photographs and asking if you do not agree with me that they do not look to be just about the same as to the damage?

A. No, this one is back of the bow. [593]

Q. Wait a minute, you are now pointing at photograph 3-D. You say this one is back of the bow. Do you think that 3-E is back of the bow?

A. They are both characteristic damage, the same kind of damage.

Q. The same kind of damage?

A. Yes.

Q. If one were to look them over one would say that there was practically no difference?

A. No, I would say they are the same kind of damage.

Miss PHILLIPS: U. S. Exhibit 3-E shows the starboard side of the forecastle of the "Silver Palm" and U. S. Exhibit 3-D shows the port side of the forecastle of the "Silver Palm."

(Testimony of James Barclay.)

Q. You used the term "naval architect." I have heard the term "marine architect." Can you tell me the difference between the two?

A. There is no real difference. A marine architect is a man qualified in the design and construction of all types of ships. A naval architect is the same. The name of "naval architect" is given to the head of the department, of the designing department in the shipyard which constructs vessels.

Q. You do not apply it as being——

A. It is not a degree.

Q. Does either term relate to a commercial ship as contrasted with a man of war?

A. No.

The COURT: A man to be a naval architect must know how to construct a ship?

A. Just the same as an architect is called a building architect.

The COURT: I might call your attention to the fact that I asked about a picture of the "Silver Palm". You were examining the witness and probably did not hear me, but I made of Mr. Lillick the inquiry as to whether he had pictures of the "Silver Palm" on the starboard side, and he handed me these pictures. If there is any objection to my looking at them, I have not looked at them yet.

[594]

Miss PHILLIPS: Have they been introduced in evidence?

(Testimony of James Barclay.)

Mr. LILLICK: The court has not looked at them.

The COURT: I have not looked at them.

Miss PHILLIPS: I imagine if counsel wants to put them in evidence he will do so later.

Redirect Examination

Mr. LILLICK: Q. Mr. Barclay, I hand you Silver Palm Exhibit 3-D, about which you have just been examined, and ask you whether you can tell me from that photograph in which direction the force was applied on the bow of the "Silver Palm"?

A. From the photograph I cannot say.

Q. I hand you a photograph of the "Silver Palm" which is apparently from her starboard bow: can you tell me whether that photograph shows the starboard bow of the "Silver Palm" as you remember it?

A. It does.

Mr. LILLICK: We offer this in evidence as an exemplar of the starboard bow of the "Silver Palm."

The COURT: It will be received as Respondent's Exhibit 16.

(The photograph was marked "Respondent's Exhibit 16.")

Mr. LILLICK: Q. I hand you another photograph and ask you whether you remember the "Silver Palm" in her condition at the time she came in sufficiently to be able to tell me whether that is a photograph of her starboard side?

A. Yes.

(Testimony of James Barclay.)

Mr. LILLICK: We offer that as our next exhibit.

The COURT: It will be received as Respondent's Exhibit 17.

(The photograph was marked "Respondent's Exhibit 17.")

#### Recross Examination

Miss PHILLIPS: Q. Mr. Barclay, did I understand you to say that the character of the resistance encountered could not have anything to do with the direction of the force—I withdraw that question. I do not think that is a fair question. You [595] have said that there was a bulge on the port side which you did not find on the starboard side.

A. Yes.

Q. That is a fact?

A. That is a fact.

Q. What I am asking you is this, you don't know whether or not there was a variation in the force which the "Silver Palm" encountered, do you?

A. No.

Q. You don't know whether the variation of the force encountered could have caused this bulge, do you?

A. I do not quite understand.

Q. Isn't my question clear?

A. It isn't quite clear.

Miss PHILLIPS: May I have the question read?

(Testimony of James Barclay.)

The COURT: Read the question.

(Question repeated by the reporter.)

A. I think——

Miss PHILLIPS: My question really calls for a yes or no answer. If you want to answer it afterwards or qualify it, by all means do so.

A. May I have the question read again?

The COURT: Read the question.

(Last question repeated by the reporter.)

A. A variation in the direction of force?

Q. No, in the amount of force encountered.

A. No.

Q. You don't know?

A. No.

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DAVID W. DICKIE,

Called for the Silver Line, Limited; Sworn.

Mr. LILLICK: Q. What is your age, Mr. Dickie?

A. 65.

Q. What is your present occupation?

A. Engineer and naval architect.

Q. In attaining the position of engineer and naval architect, will you briefly give me your experience and your particular quali- [596] fications?

A. I was brought up in the Union Iron Works here in San Francisco and trained under my father, and at the age of 22½ I became chief draftsman in the naval constructor's office at the building of the

(Testimony of David W. Dickie.)

“Nebraska” by Moran Brothers Company, at Seattle, Washington. I went to Glasgow University to complete my course, taking a post graduate course there in marine engineering, and naval architecture, coming back to this country and working in the shipyards in the East; in 1906, Christmas, I established an office for myself. For three and a half years I was professor of marine engineering and naval architecture at the University of California. I am a member of the Institute of Naval Architects of London, and Northeast Coast Institution of Engineers and Shipbuilders, the Engineers and Shipbuilders of Scotland, the Society of Naval Architects and Marine Engineers in New York. The work that I have done in the last twenty-seven years has included a great deal of collision analysis and mathematics.

Q. During your experience have you ever designed any vessels?

A. Yes.

Q. Can you tell me the yards they have been constructed in?

A. I even went so far as to have my students at the University of California work out the designs of the 300 feet, 350 feet class and the 450 feet class of Shipping Board vessels. I worked on the “Coronia” and “Carmania” on the Atlantic liners, and I worked on the Atlantic Coast vessels at the Fore River Shipbuilding Company and the Newport News Shipbuilding & Dry Dock Company.

(Testimony of David W. Dickie.)

Q. What experience have you had in collision cases with respect to coming to a conclusion as to from which direction forces could result in certain damage?

A. I have been employed on probably 85 per cent. of the collisions that have occurred on the Pacific Coast in the last 27 years, and at the present time I have four such cases in the office, and I have developed as an original work [597] of my own a method of figuring the deceleration, and the time it accelerates, and the angles that occur in a collision that takes place between vessels.

Q. After the arrival of the "Silver Palm" in San Francisco subsequent to her collision with the "Chicago" did you see her?

A. I did.

Q. Where?

A. At Pier 46.

Q. What kind of an examination did you make of her?

A. I made a count of planks in the dock, and using the dock as a base line, using Pier 46 as a base line and Pier 44 as a base line, laid off the angle and made a sketch of the damage of the ship just as she lay in the water alongside of the pier.

Q. Did you at any time go on board of the "Silver Palm"?

A. I have been aboard the "Silver Palm" but I did not go aboard that particular day.

Q. Did you go aboard her later, Mr. Dickie?

(Testimony of David W. Dickie.)

A. Yes, I have been aboard of her later.

Q. Did you make a diagram which shows a plan of the "Silver Palm", with the outline of the bow of the "Silver Palm" as it was after the collision, when she came in to San Francisco?

A. I did.

Q. Have you that plan with you?

A. Yes.

Mr. LILLICK: May it please the Court, and Miss Phillips, I have another witness who is a gentleman I cannot very well keep, and if I may, with the permission of the Court, withdraw Mr. Dickie for a few minutes?

Miss PHILLIPS: Gladly.

The COURT: Very well. [598]

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ARTHUR FORSTER,

Called for the Silver Line, Limited, Sworn.

Mr. LILLICK: Q. Mr. Forster, what is your present business?

A. Superintendent of Hull Repairs, Bethlehem Shipbuilding Corporation.

Q. What has been your general experience in the repair of ships?

A. I started in Moran Brothers in Seattle, in 1912, and was with them until the early part of the war, and then with the Albina Machine Shop, in Portland, and from there to the Craig Shipbuild-

(Testimony of Arthur Forster.)

ing Company, and in 1920 I went with the Bethlehem and have been in my present position since 1923.

Q. In your present position, do you have charge of the construction and repair of ships at the Bethlehem Shipbuilding Company, San Francisco?

A. Just hull repairs.

Q. In your employment, there, approximately how many ships would you say you have repaired from damage resulting from collisions with other ships?

A. 25 or 30.

Q. Did you see the "Silver Palm" in the latter part of October or early part of November, 1933, while the vessel was at the yard of the Bethlehem Shipbuilding Corporation for the purpose of effecting repairs arising from the collision with the "Chicago"?

A. I did.

Q. Did you notice the condition of the bow of the "Silver Palm"?

A. I did.

Q. In looking at the bow of the "Silver Palm" at that time and before her repairs, what was the situation with respect to the condition of the stem bar?

A. I would say the stem bar was noticeably to port.

Q. What is the stem bar?

(Testimony of Arthur Forster.)

A. The stem bar is the part really at the foremost part of the ship. It is a heavy steel bar which [599] fastens between the two shell plates of the vessel from port to starboard side.

Q. To put it simply, it is the bar, steel bar, to which on each side the plates of the vessel on the port and starboard bow are fastened?

A. Yes.

Q. By "noticeably to port," what do you mean, how many feet?

A. Five or six feet to port.

Q. What was the situation with respect to the port bow and the starboard bow of the "Silver Palm" immediately behind or aft of the stem bar?

A. Are you referring to the plates?

Q. Yes.

A. I would say the starboard side was crushed and the port side was bulged considerably.

Q. What, if anything, particularly attracted your attention to the fact that the stem bar of the "Silver Palm" was approximately five or six feet to the vessel's port?

A. When we dry dock the vessel it is necessary to center the ship, to set her center on keel blocks, and we use a heavy chain for centering her, and when we hung the heavy chain to center the ship you could see very plainly the stem was five or six feet to port.

(Testimony of Arthur Forster.)

Q. From the examination of the vessel, are you in a position to tell us what caused that bending of the stem bar to the port?

Miss PHILLIPS: That is objected to, the witness has not been shown qualified to answer the question.

Mr. LILLICK: Q. Let me ask you another question: Were there any marks on the stem bar or starboard bow of the "Silver Palm" from which you could draw any conclusion with respect to what had caused the stem bar to be forced over to the left?

Miss PHILLIPS: I will renew the objection. This witness has shown that he is even less qualified than the preceding witness.

Mr. LILLICK: I am asking whether he observed. [600]

Miss PHILLIPS: If you are asking what the witness observed I have no objection.

Mr. LILLICK: Q. Did you observe on the port side of the stem bar, Mr. Forster—What, if anything, did you observe on the starboard side of the stem bar of the "Silver Palm" or the starboard of the "Silver Palm's" bar?

A. On the shell plates it was considerably scratched in places, that is all, scored.

Q. Could you say what those scratches or scores were caused by?

A. I could not.

(Testimony of Arthur Forster.)

Q. Mr. Forster, I hand you Respondent's Silver Palm Exhibit No. 14, and ask you to point out to us where the stem bar is represented on the photograph that was pushed over from five to six feet to port?

A. The stem is flat, as shown at present, it should be originally, I would say just about where the star-board anchor is shown here now.

Q. Might I ask you on the photograph with my pen to indicate the position you have just pointed to, drawing a line out in the white portion of the photograph?

A. I would say the stem came right down through there.

Q. Will you mark that with an "A", please?

A. Yes.

Q. "A" indicates where the stem's original position would be on the "Silver Palm"?

A. Yes.

Q. Now with my pen and a similar line mark "B" indicating to what point the stem bow was forced over, as you say?

A. You can see it here in the picture, here is your stem bar.

Q. Will you draw out into the white portion and mark that with a "B"?

A. Yes.

Q. I show you "Silver Palm" Exhibit No. 15 and ask you what, if anything, the bulge on the port side of the "Silver Palm" indicates?

(Testimony of Arthur Forster.)

Miss PHILLIPS: Just a moment, it is objected to as calling [601] for the conclusion of the witness as to cause, as to which he has not been shown to be qualified to answer.

Mr. LILLICK: Q. Mr. Forster, from your examination of the "Silver Palm" when she was at the Bethlehem Works, did you see that bulge represented on the photograph in that exhibit?

A. Yes.

Q. Can you tell me from which direction with the keel of the "Silver Palm" as the axis the force came that resulted in that bulge?

A. I do not think so.

Q. I beg your pardon?

A. I do not think I could.

Mr. LILLICK: That is all.

#### Cross Examination

Miss PHILLIPS: Q. Mr. Forster, I *would to* show you two photographs. I am now referring to U. S. Exhibit 3-E and U. S. Exhibit 3-D. These pictures show substantially the same kind of damage, do they not?

A. Yes, they do.

Q. From your experience in ship repairing, metals do not turn or twist uniformly, do they?

A. No, some break, and some turn, and twist.

Q. It is also true that metals, themselves, may vary a good deal under different kinds of stresses, may they not?

A. True.

(Testimony of Arthur Forster.)

Q. Some forces could cause a piece of metal both to twist—I withdraw that. A stem bar bent as you have shown in that picture would not necessarily be of a uniform piece of metal, would it, in itself?

A. I would say any particular stem bar out of the same rolling would be fairly uniform.

Q. Fairly uniform?

A. Yes. You might find one stem bar that will bend considerably and another one may come along and it may be too hard to bend and break before it bent so much.

Q. There would not be any uniform yielding of the metal in any particular way?

Mr. LILLICK: Might I ask, Miss Phillips, what you mean by [602] “uniform”?

Miss PHILLIPS: I think I have gone far enough, I think counsel’s objection is well taken. That is all.

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DAVID W. DICKIE,

Direct Examination (resumed).

Mr. LILLICK: We offer the plan just identified by Mr. Dickie as our exhibit next in order.

The COURT: It will be received as Respondent’s Exhibit No. 18 in evidence.

(The document was marked “Respondent’s Exhibit 18.”)

(Testimony of David W. Dickie.)

Mr. LILLICK: Q. Mr. Dickie, will you explain that plan to us, please? Tell us what it indicates. Lay it on the court's desk.

A. This plan was made from the sketch which I made down at Pier 46 when the vessel came in after the collision, and I used as the basis to get the plan accurate the drawings of the ship which I got from Captain Ensor. The two inside drawings represent, or the two inside lines running from frame 139 to the bow of the ship represent a plan view of the third deck. The next two lines immediately outside of the first two lines represent a plan view of the second deck. The two outside lines represent a plan of the upper deck and the short part of the drawing which extends from frame 157 forward to the bow represents a plan of the forecastle deck. The short lines that are at each side of the third deck and the forecastle deck represent the frames of the ship which run from the keel around the side of the ship inside of the outside plating, or the skin of the ship up to the top. There is a space of 32 inches aft of frame 139, there is a space of 27 inches between 139 and 166, and there is a space of 24 inches from 166 forward to the stem. It was these frame lines, the rivets of which [603] show on the outside of the ship, and show in the photograph which I had this morning, that enable me to make my sketch because the side of the ship show where the rivet heads had pulled at intervals of 24 inches along on the outside of the plating. The

(Testimony of David W. Dickie.)

damaged part of the ship extended from frame 166 or the collision bulkhead forward and the particular sketch which I have drawn in lead pencil was taken at about the level of the second deck. The bulge is greatest on the port side and extends forward to frame 173, when there is a fold like an accordion pleating which extends aft to starboard, and then at frame 174 there is another bulge which extends forward to frame 175. Then there is another fold which extends aft and to the starboard, and ahead of that between frame 175 and 176. There is another bulge to which the stem is attached.

Q. Might I interrupt you a moment and ask you to identify, if you can, upon Government's Exhibit 3-B the bulges which you have indicated upon your diagram, if you can?

A. The first bulge that extends from frame 166 to frame 173 is obscured by the freight handling gear, so that I am unable to locate frame 166, but I will locate the first bulge and mark it A.

Q. Will you mark upon your plan "Bulge A" so that the photograph and the plan will agree?

A. Yes. I have marked on the photograph "B" "C" and "D" and I am marking the drawing with "B", "C", and "D".

Q. Now, will you continue?

A. On the starboard side the damage on the ship showed a slight bulge which extends from frame 166 forward to frame 171, and then the dam-

(Testimony of David W. Dickie.)

age extends in a circular form in toward the center of the ship, and coming back to about frame 170, and then passing from frame 170 forward in a wiggly line frame 176, where it joins the stem on the starboard side. That describes the damage as shown on the plan.

Q. Will you, from your plan, tell me whether you can tell us from [604] which direction the forces came that caused the damage as indicated?

A. The direction came from the starboard side of the "Silver Palm" and passed toward her port side, at an angle less than 90 degrees through the center line.

Can you give me any explanation of why at the very stem of the damaged portion the stem of the "Silver Palm" seems to be turned to starboard, if that be the stem—what is that?

A. That is the stem, and the reason that it appears that way at that particular place was on account of the drawing of the plate on the starboard side which was formerly in line, which was almost straight from frame 166 to the stem. That length of plating was drawn into and is opposite the bulge so that the plate was shortened, and in the shortening of the plate the stem was inclined to turn to the right, to the starboard, and then the stem of the "Silver Palm" passed inside the collision of the "Chicago" and was no longer affected thereby.

Q. Do you know whether the stem shown here from a view above was broken below the point?

A. It was, yes.

(Testimony of David W. Dickie.)

Q. Which way was her stem bar, if that is the stem bar, turned or canted?

A. The whole bar was canted to port, thrown over to port bodily, and the stem bar below was crushed.

Q. Have you a photograph, Mr. Dickie, showing the "Silver Palm" from a stem view?

A. It is in your brief case, there.

Q. I hand you what purports to be a photograph from forward of the stem of the "Silver Palm". Do you know whether that photograph that I have just handed you is accurate and correct relative to the condition of the "Silver Palm" after the collision and before she was repaired?

A. That is the condition the "Silver Palm" was in when I saw it at Pier 46. Of course, part of that was below the water line when I saw her at Pier 46. [605]

Mr. LILLICK: We offer this as our next exhibit.

The COURT: It will be received as Respondent's Exhibit No. 19.

(The photograph was marked Respondent's Exhibit 19.)

Mr. LILLICK: Q. Will you explain this photograph in relation to your plan and tell me what the situation is with reference to the stem, and how it was affected by the collision?

A. When the "Silver Palm" appeared at Pier 46 the water line was down about where I have

(Testimony of David W. Dickie.)

marked with an arrow "W.L." The water line changed on the ship for the reason that they were taking cargo out of the ship all the time so that this merely represents the water line at one particular time. The section that I have shown on my drawing with a red line is taken where I have marked "2-D," and what means the second depth, and there is shown in this photograph a row of rivets which followed from the point of my arrow clear across the photograph and came out on the starboard side.

Q. Can you indicate those in any way?

A. Yes, I have indicated them on each side with "2-D" on the starboard side and on the port side "2-D"; the row of rivets that are torn by the damage is clearly shown in the photograph. I have also marked on this photograph the center line which extends from the center of the keel block at the bottom up to where the stem originally was on the ship.

Q. Will you mark that line "ZX," please?

A. I have marked the line "ZX". The way I located the top of this line is I first located the port light which I have marked with an arrow as between frames 169 and 170 on the starboard side and 169 and 170 on the port side. These port lights I am marking on my drawing with an oval mark at the level of the forecastle deck, and I am writing "Port lights." These port lights are opposite each other at corresponding positions on the ship, and I

(Testimony of David W. Dickie.)

took half the distance between these port lights to determine the position of the center line where it pass- [606] es through the fluke of the anchor, that is to say, the starboard anchor of the "Silver Palm." My first impression in looking at this damage of the "Silver Palm" was that the "Silver Palm" was still in the water and that the other ship which was in collision with her had passed from the "Silver Palm's" port to her starboard, and had carried the entire structure of the bow over to the port side of the "Silver Palm."

Q. I beg your pardon, Mr. Dickie, you have just stated that your first impression was that it moved from port to starboard.

A. No, starboard to port. That was a mistake.

Q. You said port to starboard?

A. My first impression was that the vessel, that the "Silver Palm" was still and that the vessel with which she had been in collision had come at her from the starboard side and had pushed the bow over toward the port side and caused all the damage. That impression was confirmed by the position of the starboard anchor on the "Silver Palm" which was driven into the hull of the ship, whereas the anchor on the other side was moved toward the port. The stem of the "Silver Palm" was 4.7 feet pushed over to port and the three folds immediately aft of the stem indicated to me that the material which formerly had extended almost in a straight line from frame 166 to the stem was

(Testimony of David W. Dickie.)

folded up like an accordion pleating to dispose of the length of the plates from frame 166 to the stem.

Q. Did you find that that stem bar was broken?

A. Yes.

Q. Where?

A. The stem bar was broken at about the sixth plate lap down from the forecastle deck.

Q. Your plan as drawn indicates the stern bar pointing to the starboard side of the "Silver Palm."

A. Yes.

Q. How far down did that stem bar point in that direction before there was a break?

A. The stem bar pointed in the direction that I have shown it from about the second plate lap from the top down [607] to about the fifth plate lap, and from the fifth plate lap to the sixth plate lap the direction of the pointing of the stem was more or less confused, due to the crumpling of the material.

Q. What happened to the stem bar above the second plate?

A. It was so badly crushed up in the mess that it was difficult to form an opinion of what became of it.

Q. Did you see the "Chicago" after the collision?

A. No, I did not.

Q. I show you U. S. Exhibit 2-M, with the gash made in the side of the "Chicago," and calling your attention to the forward portion of the cut, ask you

(Testimony of David W. Dickie.)

to tell me whether in comparing the forward line of the cut to the after portion of the cut you can tell us whether the "Chicago" was in motion at the time that that cut was made?

A. Yes, she was in motion.

Q. Why?

A. Because the plating which covers the side of the "Chicago" is torn from the forward side of the gash, and all of the intervening material between the forward part of the gash and the after side of the gash is crumpled up into a bunch at the after side.

Q. I show you U. S. Exhibit 2-D, and call your attention to the after end of the cut in that photograph, and ask you whether you can tell me whether there is any indication from it of whether the "Chicago" was moving at the time the two vessels came into contact?

A. The "Chicago" was moving at the time the two vessels came into contact.

Q. In which direction?

A. The "Chicago" was moving toward the left side of the "Silver Palm," that is, toward her bow, and this crushed material that shows in the after part of the photograph U. S. Exhibit 2-D was the material that was stowed in the cut on the starboard side of the "Silver Palm."

Q. Will you explain to the Court from this photograph how you know that the "Chicago" was going ahead at the time of impact? [608]

(Testimony of David W. Dickie.)

A. The reason that this photograph shows that the "Chicago" was going ahead is that the deck of the "Chicago" at the left-hand side of the picture where the flare of the vessel is shows all along that it was torn and drawn as the vessel moved ahead. The edge of the plate shows where it is rubbed, and down at the bottom there is a piece of plating which was not torn away, but was pointed in a fore-and-aft line, in contradistinction to the side of the vessel, which is not in a fore-and-aft line, but is in a line which is at an angle to the center line of the ship, the same as every ship is built. It will be noted on this plate which I am marking with an "S" that the paint on the plate is scraped where the plate came in contact with some *obstruction*, such as might be represented by the lower part of the stem of the "Silver Palm," and the paint is scratched off and the material of the decks, and all of the internal structure is moved aft and pulled up at the after end of the *of the* cut, toward the right side of the photograph, indicating that the vessel was moving in the direction that the guns are pointed.

Q. What, if any, explanation is there of what we have termed the accordion pleating at the after end of the gash in the "Chicago"?

A. The *according* pleating formed itself there because it was imprisoned in the space which I am marking with the black pencil on the drawing of

(Testimony of David W. Dickie.)

the "Silver Palm" on the starboard side of the gash in the bow of the "Silver Palm."

Q. Will you mark that pencil identification with a "D. W."?

A. Yes.

Q. Is there any confirmation of what you have just shown us on Respondent's Exhibit 19, the bow picture of the "Silver Palm"?

A. Yes. All of the material between the upper part of the ship down to the plate lap No. 6 indicates quite clearly the space on the starboard side which is represented by the mark "D.W." on my plan, where this crumpled material is stowed. Then another thing [609] that indicates that the vessel was moving ahead is the fold in the plate of the "Chicago" which extends outboard—it shows better on Government's Exhibit 2-M under the word "Mare" of "Mare Island." It will be noticed that the fold of the plate extends outboard and then inboard, forming a fold which would have been turned in the other way if this damage had been caused by an object pressing from the side of the "Chicago" toward the center of the "Chicago."

Q. Could the result that is evidenced by this photograph have occurred by reason of the "Silver Palm" approaching the "Chicago" and striking her on approximately a 40-degree angle at a rate of speed anywhere between 8 and 10 knots per hour and her coming in contact with the "Chicago" if the "Chicago" had been at rest in the water?

A. No.

(Testimony of David W. Dickie.)

Q. What, in your opinion, is the explanation of the fact that on the "Chicago" the folds in the rear of the cut and the sharp cut in the forward part of it occurred?

A. My explanation is that the "Chicago" was going ahead at quite a substantial rate of speed.

The COURT: What would you call "quite a substantial rate of speed"?

A. About between 6 and 7 knots. The ordinary collisions that have taken place on the Coast, here, the impact has usually taken place in the neighborhood of 1 knot, and the vessel that inflicts the damage has usually not been injured as badly as the "Silver Palm" was injured in this case.

Q. What would you estimate the "Silver Palm" was going?

A. I would say the "Silver Palm" was going about between 5 and 6 knots.

Mr. LILLICK: Q. Mr. Dickie, we have had some testimony with respect to tests made by a professor of the University of California, using these two models which are on the desk, and to which [610] I am pointing. The one which is marked "Golden Boats" is a model that was used as a model of the "Silver Palm" and the other with the rods in the center is the model that was used for the "Chicago". The testimony was in effect that the model used for the "Silver Palm" was in a swimming pool with a string at a ring upon its stem at a distance of

(Testimony of David W. Dickie.)

approximately twenty feet from the model of the "Chicago," and that these gentlemen attained a speed upon the part of the model of the "Silver Palm" which they testified with the relative proportions of these vessels in comparison with the "Silver Palm" and the "Chicago" amounted, when the "Silver Palm" model struck the model of the "Chicago" to a speed of 12 knots an hour, and that on another test that they made the "Chicago" was pulled through the water on a similar string and by a similar method, but only a few feet away from the man who pulled the model of the "Chicago" through the water; that when they struck at any speed which was around about 6 knots per hour on the part of the "Chicago" and 12 knots per hour on the part of the "Silver Palm", with an angle of 40 degrees between them, that the two vessels would strike and sideswipe and end in a position with the bow of the "Silver Palm" in the opposite direction to that of the bow of the "Chicago" and approximately parallel. With an experiment performed like that as indicated by those two gentlemen, with models of this type, would such a test be, in your opinion, accurate as to its result if the vessels, themselves, were at sea?

Miss PHILLIPS: Your Honor, may I make the objection that the witness has not been shown to have any knowledge or experience with model ship tests.

(Testimony of David W. Dickie.)

Mr. LILLICK: Q. Have you ever had any experience with model tests?

A. Part of my training at the University of Glasgow was that we were taken to Denny Bros. tank where they make the [611] same tests that they make in the tank at Washington, and I likewise was taken to the tank in Germany at the Hofschuler, where they had a very elaborate tank, and I have seen model tests made in both of those places, properly made, where the models were made exactly to the shape of the ship and the results had some bearing and relation to the ship after she was completed.

Miss PHILLIPS: I believe I have a right to ask a question.

Q. Mr. Dickie, when were you in Glasgow?

A. I think it was either 1903 or 1904, or 1904 or 1905.

Q. When did you see these model tests done?

A. In 1903, or it was in that time that I saw the model tests made in the tanks at Dumbarton.

Q. Dumbarton, Scotland?

A. Yes, and I likewise saw one in an English tank, and a German tank, but they were not all in the same year.

Q. Can you give me an idea of the approximate date?

A. I would have to look up the college curriculum to get the exact date.

(Testimony of David W. Dickie.)

Q. I do not wish the exact date, I said approximately.

A. Well, 1903, 1904, along in there.

Q. Did you perform any of those tests yourself?

A. No, the assistant professor at the University of Glasgow performed the experiment for the benefit of the students, and we were free to ask questions and study the thing.

Q. Might I ask if you were a student at the Glasgow University at that time?

A. Yes, I was.

Q. In what year?

A. In the junior and senior years.

Q. Will you tell me how old you were, in reasonable limits?

A. I was about 24 or 25, somewhere along in there.

Q. What experience in performing ship model tests since that date have you had?

A. My experience in ship models is confined to the work that I did with small boats in the bay, here, designing [612] small boats from 14 feet up to 25 or 30 feet, and putting power in them.

Q. You misunderstood my question, I probably did not make it clear enough. I asked you what experience you had in conducting ship model tests?

A. I have had no experience in conducting ship model tests in a tank, what we call an experimental

(Testimony of David W. Dickie.)

tank, outside of the tank at Denny's, Dumbarton, and the tank in England and the tank in the German school.

Q. That was at the approximate time you have stated?

A. Yes.

Q. When you say the professor conducted these tests?

A. And the staff at the tank.

Q. How long were you at Germany when you saw the ship model test there?

A. About two days we were down at the high school as the guest of the Naval Architects Society.

Q. You were the guest of the Naval Architects Society?

A. Yes.

Q. You just went down to see the tank, or see the test there?

A. Just for that purpose.

Q. They were doing some tests?

A. Yes, elaborate tests.

Q. In England, you saw it there?

A. The German tank was the best at that time, they had glass sides on the tank and you could view it from the top, sides and bottom.

Q. You mentioned three tanks that you were acquainted with, that had ship model tests, one in Scotland, one in England, and one in Germany. What was your experience at the tank in England?

A. The same thing, we were the guests of the

(Testimony of David W. Dickie.)

Shipyards there to see tanks being used and tests made and results taken.

Q. You have had no experience in any of the three of them, nor were you charged with any responsibility in conducting them?

A. No, I was not charged with any responsibility. I was present, being instructed with respect to the testing of ship models in the tank. [613]

Q. Have you ever been to the Washington ship model testing tank?

A. No, I have never had the pleasure.

Q. By the way, what was the size of these tanks you have referred to?

A. I think the one at Dumbarton was about 250 or 300 feet long, and I think the biggest one was the German tank. It was a little smaller than the present tank at Washington.

Q. What kind of tests did you witness at these tanks?

A. I witnessed a test of a model being towed with a towing machine, a test of a model being operated with a propeller that was driven by another machine that followed after the ship. That is about the simplest explanation that I could give of that.

Q. I would like to get at the purpose of the tests that you saw that were being made.

A. The purpose of the test was to give a criterion upon which to base the speed and horsepower of a final ship that was to be built from the model that was being tested.

(Testimony of David W. Dickie.)

Q. What was the date of the last ship model test that you have ever seen?

A. The date I have given you.

Q. The dates you gave me?

A. Yes.

Q. Have you had any experience in the conducting of aeroplane tests, model aeroplane tests?

A. No, the only aeroplane laboratory that I have seen is down at Palo Alto.

Q. You have had no experience in seeing tests there?

A. Yes, I saw them make a test of the aeroplane—I went down there as the guest of Domonosky, and they put the aeroplane in the machine and ran the test for me. I was a guest there, during the whole time they were running it. In fact, it was run for my pleasure.

Q. They are a high speed test, are they not?

A. Aeroplane mathematics are the same as marine mathematics.

Q. As I understand you, the aeroplane test is a more highly com- [614] plicated test than the ship test?

A. No, I would not say it is more complicated.

Miss PHILLIPS: Your Honor, my objection that the witness is not qualified to answer the question put to him is renewed.

The COURT: Q. You have made a study of that particular line of work?

A. I have, yes.

(Testimony of David W. Dickie.)

Q. You have outside of this?

A. I have done a great deal of theoretical work along that very line; I have done theoretical work and then had the opportunity to build a small boat upon which I could make complete full-sized tests to compare with my theoretical work.

Q. Those were tests as to speed?

A. Speed, and horsepower, and turning, and all that sort of thing.

Q. Did you make it as far as damage from collision was concerned, as to what might happen as to movements?

A. Yes, I have made tests as far as stopping a vessel in a particular time and taking the time and the distance.

Q. As far as collisions are concerned, as to the way a ship drifts or acts after having a collision?

A. Yes, I have done it on full-sized ships.

Miss PHILLIPS: Q. You mean you have run ships through a collision?

A. Yes.

Q. You mean you actually ran the ship so as to make it collide with another vessel?

A. No, please don't misunderstand me. What I mean is this—

Q. I thought your answer to the Court's question so indicated.

A. What I did say was this, I took a full-sized ship and ran her up to the full speed that she would go. I then shut the engines off and reversed her and

(Testimony of David W. Dickie.)

I measured the time and the distance that it would take for her to stop, and then, previous to that time, [615] I had made all of the calculations and delivered them to the Standard Oil Company; the Standard Oil Company wanted to use them on another ship, and they conducted or at least invited me along as a guest conductor, to conduct this test in particular that I am speaking about, and I came within one second of the time that the vessel stopped.

The COURT: Of course, that particular knowledge might pertain to certain phases of the testimony given here in regard to the signals given and the force brought to bear for the purpose of slowing up or controlling the speed of the two ships, but the question that I am asking is more pertinent than that. This test was not for the purpose of testing out the speed, primarily it was intended to test out two objects of certain relative weights in the form of ships which struck one another at a certain angle, what would happen with regard to those two ships; the question is, have you conducted investigation, either from study or from actual experience in connection with models or ships whereby if they strike at certain angles, taking for granted that they had certain speeds, as to just what way they would turn? Do you feel that you have studied that?

A. I feel that I have studied that question, and those models——

(Testimony of David W. Dickie.)

Miss PHILLIPS: Just a moment, the witness wants to testify.

The COURT: I have no objection to your further going into the question, but what he testifies is that he feels his studies have qualified him, even though he has not actually reproduced a collision, by maneuvering a ship.

A. I have not reproduced a collision by maneuvering the ship. The collisions that I have reproduced have all been in big ships. I have observed all of the conditions on the big ships after the collision had taken place. I have not been present at an actual [616] collision.

Miss PHILLIPS: What I am getting at is the witness' experience in a highly involved and technical study of ship model tests, and I am trying to get at whether he has ever studied such tests and what his experience is.

The COURT: Do you feel that you can compare the knowledge you have as against tests of that kind?

A. I would sooner base my conclusion upon my studies than any test that was made.

Q. I am not trying to ask you whether you feel that you are in a position to criticise the tests. I am asking you if you feel that you can compare the knowledge that you have as against a test of that kind. That is the point.

A. Yes.

(Testimony of David W. Dickie.)

The COURT: We have now reached a point of adjournment. If I decide that I will permit him to answer, how much longer do you think the trial will take?

Mr. LILLICK: I think Mr. Dickie is the last witness. We might have one more witness to testify with respect to what he saw of the "Silver Palm's" condition after the collision, and that will conclude our case.

The COURT: I imagine if Mr. Dickie is finally decided by the Court to be qualified to answer cross-examination will result from that. How much longer do you think it will take, at least half a day?

Mr. LILLICK: It will depend upon *Mrs.* Phillips' cross-examination of Mr. Dickie, which may be protracted. (After discussion)

The COURT: I would rather give you a day for it. In other words, I would rather have this case concluded, with the exception that I will draw a jury in the morning, which will probably take three-quarters of an hour, and then we will proceed. We will take an adjournment now until Tuesday, at ten o'clock a.m. [617]

(An adjournment was here taken until Tuesday, March 27, 1934, at ten o'clock a.m.)

Filed June 19, 1934. [618]

Tuesday, March 27, 1934.

DAVID W. DICKIE,

Direct Examination (resumed).

Mr. LILLICK: May it please the Court, at the conclusion of the last day's hearing in this matter there was under submission an argument with respect to the admissibility of a question that I had propounded to Mr. Dickie, and it is quite impossible for me to remember the phraseology of the question, so if I may read the question from the last day's proceedings I will do it.

The COURT: I know the substance of it.

Mr. LILLICK: Q. The question was:

"Q. Mr. Dickie, we have had some testimony with respect to tests made by a professor of the University of California, using these two models which are on the desk, and to which I am pointing. The one which is marked "Golden Boats" is a model that was used as a model of the "Silver Palm" and the other with the rods in the center is the model that was used for the "Chicago." The testimony was in effect that the model used for the "Silver Palm" was in a swimming pool with a string at a ring upon its stem at a distance of approximately twenty feet from the model of the "Chicago," and that these gentlemen attained a speed upon the part of the model of the "Silver Palm" which they testified with the relative proportions of these vessels in comparison with the "Silver Palm" and the "Chicago" amounted, when the

(Testimony of David W. Dickie.)

“Silver Palm” model struck the model of the “Chicago” to a speed of 12 knots an hour, and that on another test that they made the “Chicago” was pulled through the water on a similar string and by a similar method, but only a few feet away from the man who pulled the model of the “Chicago” through the water; that when they struck at any speed which was around about 6 knots per hour on the part of the [619] “Chicago” and 12 knots per hour on the part of the “Silver Palm,” with an angle of 40 degrees between them, that the two vessels would strike and sideswipe and end in a position with the bow of the “Silver Palm” in the opposite direction to that of the bow of the “Chicago” and approximately parallel. With an experiment performed like that as indicated by those two gentlemen, with models of this type, would such a test be, in your opinion, accurate as to its result if the vessels, themselves, were at sea?”

Miss PHILLIPS: Your Honor will recall that to that question I made the objection that the witness had not been shown to be qualified in the performance of model ship tests, or any knowledge of model ship tests, and a cross-examination was conducted thereafter into his experience with model ship tests, and I believe at the time the Court adjourned, at that stage of the proceedings. Might I also point out that the witness has not been shown to be qualified in the maneuvers of vessels at sea?

Mr. LILLICK: If your Honor please, the tests

(Testimony of David W. Dickie.)

were made by gentlemen who, in my humble opinion, lacked so many qualities that Mr. Dickie has in comparison between their respective experiences, and so flattering to Mr. Dickie, that if the experiments made by these two gentlemen were of any validity at all Mr. Dickie's testimony with respect to it is entitled to so much more respect than theirs, and by comparison the qualifications of the two gentlemen who made the tests are so disparaged to the qualifications of Mr. Dickie that it seems almost unnecessary to argue that Mr. Dickie has already shown by the rigorous cross-examination by Miss Phillips, and by the questions propounded by the Court, to be certainly able to give us an opinion that should be entitled to at least some weight by the Court. [620]

Miss PHILLIPS: My suggestion was not as to the comparison of the qualifications of the two sets of witnesses, my suggestion was that the witness had not been shown to have been qualified in ship model tests, and that Mr. Dickie was asked to make a criticism of the ship model tests with vessels at sea, when he has not had any experience in it. The last part of the question was that the witness should make a comparison between the ship model tests and vessels at sea, the maneuvers of vessels at sea. I do not think counsel has asked him any questions at all to show Mr. Dickie's experience in maneuvering vessels at sea.

(Testimony of David W. Dickie.)

Mr. LILLICK: Addressing myself to that last part, the other gentlemen never even saw the result of the collision, and they were not testifying from the standpoint of what would happen with respect to maneuverability, they were testifying with respect to what would happen if the vessels struck one another.

Miss PHILLIPS: He is asking this witness to compare a ship model test with vessels maneuvered at sea when he is shown to have no experience or qualifications in the maneuvering of vessels at sea. He has not shown he has had any experience in that. He has not been asked any questions about the maneuverability of vessels at sea. I did not pretend to qualify my witnesses upon the maneuverability of ships at sea, and counsel is endeavoring to qualify his witness on both scores.

Mr. LILLICK: I am not attempting to qualify him, and have not attempted to qualify him on the question of maneuverability of ships at sea, but I do say to the Court in all seriousness, whatever point there may be in Miss Phillips' objection to the question propounded, it is an objection that may run to the weight of this witness' testimony, but certainly not as to its admissibility. I submit the objection.

The COURT: Of course, the situation here is the witness, him- [621] self does not claim to have made any model tests or be familiar in the true sense with what would result from certain model tests,

(Testimony of David W. Dickie.)

but what he does believe is, he has made a study of collisions as between vessels, full-sized vessels in collisions, and knows something about their conduct under crash conditions, and feels that by use of his scientific knowledge he can predict as to whether the performance of models would conform to the situation at sea. Am I correct in that?

A. Yes.

Q. That is your point?

A. Yes.

The COURT: I am inclined to believe that it does go to the matter of weight of his testimony rather than it would not be admissible at all, because if he can show by his testimony that there is no comparison between the two from a scientific standpoint, I believe he has a right to express himself, even though he has not actually seen the ships in contact. You may answer.

Miss PHILLIPS: May I have an exception to the Court's ruling, and, to save time, I would like not to have to repeat the objection to each question asked, but may I have an exception to the testimony of the witness running along as to his criticism upon the ship model tests testified to by Professor Woods and Professor Vogt.

The COURT: You may have that objection to the testimony.

Mr. LILLICK: There is no objection to that, except as the objection may be limited, if Miss Phillips will be good enough to state when during

(Testimony of David W. Dickie.)

the course of the examination of Mr. Dickie she feels that the objection that she is now asking be applicable to the following questions shall end.

Miss PHILLIPS: I think we will understand each other. I do not mean that there is a blanket objection to everything the witness can testify to.

The COURT: I do not know of any question that is going to be [622] asked by Mr. Lillick, but I will say that to the general question the Court just permitted of the witness, I imagine that would cover the entire phase, and he would be able to make the statement as to whether he had covered the subject.

Mr. LILLICK: I have no objection to that. Mr. Dickie, will you answer the question propounded—perhaps we could have the end of that question repeated. May the Reporter read the very end of it?

Mr. McWILLIAMS: I have the transcript here, and the last of it is: “With an experiment performed like that, as indicated by those two gentlemen, with models of this type, would such a test be, in your opinion, accurate as to its result if the vessels, themselves, were at sea?”

The COURT: Of course, it would be as to the general effect, rather than accurate as to its result of an accident to two vessels at sea. Of course, we will assume at the start that he could not accurately say—the word “accurate” is used in a comparative sense. The question is, What is likely to occur under those dynamics?

(Testimony of David W. Dickie.)

A. The tests between the two models on the table would not be representative of performances of the "Silver Palm" and the "Chicago," for the reason that the fundamental law governing the action of models with respect to ships which they are purporting to represent requires that the models be similar, that is to say, the length, breadth and the draft of each model must be similar, must be exactly the same as the ships that they purport to represent. That being true, the law known as Froude's Law applies to the tests a certain factor; the dimensions are related to each other, the wetted surface is proportional to the square of the linear dimensions, and the horsepower is 3.5 to the linear dimensions, etc. So that unless these [623] models were exactly the same as models of the ship, any test that was made with them would not be a fair representation of what would take place.

Q. Comparing a string with a propeller as a means of propulsion on a model, how, if at all, would the result vary?

A. The result between the application of the power to the model by means of the string and application of power to the model by means of having a propeller at its stern is entirely different, because the propeller has an action on the ship, and the ship has an action on the propeller; one is called the augmentation and the other is called the thrust deduction. With the use of the string, the

(Testimony of David W. Dickie.)

performance of the models is changed, due to the total lack of having a propeller present.

Q. Is that without taking into consideration whether the string was dropped in the water after the initial momentum was given to the model?

A. That would make no difference, no matter what happened to the string, the fundamental difference in trust deduction and the augmentation is entirely absent by the use of string.

Q. What would you say as to the effect upon the momentum of the model if the string, itself, were dropped in the water and was thereafter a drag on the model, would that affect it in any way?

A. That would slow up the speed of the model.

Q. The model used for the "Chicago" was a model which Professor Woods testified was 49 inches long, the model I am showing you, and the testimony shows that the "Chicago" was 572 feet at the water line. Will you give me what that ratio is?

A. That is 140 to 1.

Q. With the "Chicago" model that I show you, 49 inches long, and the "Chicago," herself, with a length of 600 feet over all, what would that ratio be?

A. That is 147 to 1.

Q. The testimony shows that the model used for the "Silver Palm", [624] the one I show you, was 40 inches long, and the "Silver Palm," according to the testimony, was 400 feet at the water line. What is that ratio?

A. That is 135 to 1.

(Testimony of David W. Dickie.)

Q. With the "Silver Palm" model 40 inches and the testimony showing her to be 475 feet over all, what is that ratio?

A. That is 142½ to 1.

Q. Assuming, Mr. Dickie, that the ratio used by the gentlemen who performed the tests to which they testified was 150 to 1, what have you to say as to the variation there would be in errors that might have been committed in effecting the tests if the ratio of 150 to 1 was carried out?

A. There would be an error in power applied to the string higher than any propeller error in relation to the square of 150 to the square of 140 and 135.

Q. Would or would not an error of any character mean in the computation by the gentlemen who performed these tests, using the models at a ratio of 150 to 1—would that error be either magnified or would it be increased or decreased in any comparison with the ratio of 150 to 1?

A. The use of a ratio of 150 to 1 in his figures in place of the ratio of 140 or 135 to 1 would be an increase in the error in the proportion of the square of those numbers.

Q. We have no testimony with respect to the computations made by the gentlemen who made these tests with respect to the breadth of the two models. Looking at the models before you, and their comparable breadth, what would you say as to the result of tests made by the use of these models in com-

(Testimony of David W. Dickie.)

parison to the actual performance of the "Chicago" and the "Silver Palm" at sea?

A. With the "Chicago" model the relation of the beam to the length is about 5.6 to 1. In the "Silver Palm" model the relationship is approximately 4.95 to 1. The relationship between the length and the beam of the "Chicago" is approximately 8.7 to 1. The relationship between the length and the beam of the "Silver Palm" [625] is approximately 7.4 to 1. This discrepancy between the relationship of the beam to the length of the model as compared with the actual ships that they were made to represent would make any deductions that might be drawn from the form of the models inapplicable to the ships, themselves, whether in the bay or at sea.

Q. I call your attention to a strip along the keel of the model of the "Silver Palm" which Professor Woods testified was, with the proportions used by him on the "Silver Palm", what would represent a three-foot false keel running from stem to stern of the "Silver Palm". What, if any, effect would that false keel have had with the rudder or any test that would make an error in the test due to increased displacement or increase in wetted surface?

A. The keel that is put on the model and which is not present on the "Silver Palm" would add to the wetted surface of the model over and above the wetted surface of the "Silver Palm," and would

(Testimony of David W. Dickie.)

add to the displacement of the model over and above the displacement of the "Silver Palm," so that there would be an error in that test due to the presence of that keel.

Q. I call your attention to three projections upon the keel of the model used for the "Chicago," which Professor Woods testified in relative dimensions would have meant that each projection was 12 feet in length and 6 feet in width. What, if any, difference in the tests made by the use of that model would those projections make?

A. There would be some error due to the wetted surface of those projections, but the principal error would be due to the eddy formation caused by the projections on the bottom of the vessel.

Q. Would either of the projections upon the bottom of those two vessels, the false keel upon the model of the "Silver Palm," and the three projections upon the model of the "Chicago" have [626] had any effect, whatever, if the vessels, themselves, at sea, had similar false keels or projections upon their surface in relation to their movements after the collision?

A. If the vessels, themselves, had projections of that type, it would still be questionable whether the projections on the large vessel would act just exactly the same as they would on the models.

Q. Mr. Dickie, I show you Government's Exhibits 9-A and 9-B, indicating the position of the two vessels after the impact, as testified to by Pro-

(Testimony of David W. Dickie.)

fessor Woods and Professor Vogt, between the models, with the "Chicago" either at rest or moving ahead or astern at not more than one knot, and the "Silver Palm" striking her at a speed of 12 knots, and will ask you whether it is even possible with such a collision between the two vessels at sea they could have ended in the position indicated on the diagram without some action upon their propellers?

Miss PHILLIPS: It is understood my objection still goes to the line of testimony, and I will add the further objection that this witness is not shown to have made any study or to be qualified in the field of dynamics.

Mr. LILLICK: This is a common sense knowledge, not even a knowledge of dynamics. I will submit the objection.

Miss PHILLIPS: This witness is supposed to be testifying as a qualified expert. He is not asked about common sense. I want my objection in the record, and I want it understood that I have made that objection.

The COURT: Q. Have you studied dynamics, at all?

A. Yes, dynamics is a fundamental study that precedes naval architecture. They are just an elementary study that precedes naval architecture.

Q. You have studied dynamics?

A. Yes. [627]

Mr. LILLICK: Do you wish the question repeated?

A. If you please.

(Testimony of David W. Dickie.)

Mr. LILLICK: May I have the question read?

The COURT: Read the question.

(Question repeated by the reporter.)

A. My opinion is they would not end in this position, that is to say, Exhibit 9-A shows relative positions at the time of impact, and Exhibit 9-B shows relative positions after the impact. I think that they would have had to have used their propellers and rudders in order to get in this position.

Mr. LILLICK: Q. Why?

A. Because the amount of weight that is involved in the two ships is so great that the larger vessel, which is intended to represent the "Chicago", would not have held its position and allowed the "Silver Palm" to swing, as is shown, due to the fact that there is a certain circle, certain definite circle that the ships have to go through in order to get into this position.

Q. What would have happened with respect to penetration?

A. If the two vessels struck as shown in Exhibit 9-A, there is no question about it, that the "Silver Palm" would have penetrated the "Chicago". The usual amount of penetration for two vessels in this situation is 18 feet when the moving vessel is going about  $1\frac{1}{2}$  knots an hour and the other vessel is practically stationary.

Q. In addition to penetrating the "Chicago," what would be the result, if you can tell, with respect to the ultimate position of the vessels after the col-

(Testimony of David W. Dickie.)

lision, assuming that the engines of one vessel were going astern and the engines of the other vessel were going ahead?

A. If the engines of the vessel intended to represent the "Silver Palm" were going astern, or, rather, going ahead, and the engines of the vessel representing the "Chicago" were going [628] astern, the shape of the hole in the vessel that was injured, or the damage in the hole would tend to draw the bow of the "Silver Palm" to starboard.

Q. Mr. Dickie, what would you say as to the validity of the result obtained by the gentlemen who performed the tests with the two models before us as to the actual position of the "Silver Palm" and "Chicago" at sea after the collision, in view of their difference in breadth, their lack of propellers, their lack of anything tending to action upon the part of the officers of the respective vessels at sea?

A. I do not believe the models would assume anything like the normal position that vessels would at sea.

Q. Mr. Dickie, I hand you Respondent's Exhibit No. 18, and ask you whether the actual bending of the bow of the "Silver Palm" in the position shown by you on that exhibit could have been the result of the "Silver Palm" having penetrated the port bow of the "Chicago" to a depth where she finally brought up on the turret, the forward turret of the "Chicago"?

A. No. The bow of the "Silver Palm" would be crushed back in a straight fore-and-aft line, if she

(Testimony of David W. Dickie.)

penetrated the "Chicago" lying at rest rather than by crushing over to port the way she does in the drawing.

Q. With particular reference to the weight of the material in the "Chicago" in and about her forward turret and a gun in the turret forward which finally came in contact with the stem of the "Silver Palm," is there any indication upon your chart, your diagram, the exhibit before you, of the result of that contact with the forward turret and the forward gun?

A. No.

Miss PHILLIPS: Just a moment, I object to that upon the ground that this witness has not been shown to know anything about the shape of the "Chicago's" forward turret.

Mr. LILLICK: I withdraw the question. [629]

Q. Mr. Dickie, from your examination of the stem of the "Silver Palm" are you able to state whether the diagram, the Exhibit now before you, is indicative of the general result of the "Silver Palm" coming in contact with the "Chicago's" hull?

A. It is.

Q. Why?

A. That drawing was made at about a section, a horizontal section in the neighborhood of No. 2 deck; immediately above this point at a distance, above this point, there was a mark in the crushed structure of the "Silver Palm" that fitted against the gun of the "Chicago," and below this point there is

(Testimony of David W. Dickie.)

a crushed part of the "Silver Palm" that indicates that it came against some hard object, but the particular place where the hit was made, which happened to be the easiest way for me to make the drawing from, where I was, was made in the space between the turret above and this hard square compartment below, which I subsequently learned was the magazine, or something of that nature.

Miss PHILLIPS: Just a moment, that is objected to: the witness is not shown to have known that. He has never been shown to have been on board the "Chicago" at all.

Mr. LILLICK: That portion of the witness' answer beginning "I subsequently learned" may be stricken out.

The COURT: It will be stricken out.

Mr. LILLICK: Q. Mr. Dickie, in your opinion would it have been possible for the "Chicago" to have sheared off the "Silver Palm's" bow even if the "Chicago" had been coming at a speed of 18 knots an hour, if the "Silver Palm" had struck her approximately 100 feet off of her stem, and at any speed between 6 knots an hour and 11?

A. The contact of the "Chicago" with the "Silver Palm" would not have sheared off her bow, it would have crushed the material over to port.

Q. Why wouldn't it have sheared it off?

A. Because this material of which the ship was essentially of a ductile nature, in order [630] work it to the shape of the ship, at all, it must be

(Testimony of David W. Dickie.)

of such a nature that it can be bent and punched and planed and generally worked by the steel worker, and such a material is of sufficient ductility to permit of its being bent and crushed rather than sheared off.

Q. What was the size of the models used in the testing pool in Washington and in the other testing pools?

Miss PHILLIPS: Just a moment, your Honor: That is objected to. The witness has admitted that he has not had experience in these pools since 1903, and this is calling for hearsay testimony.

Mr. LILLICK: I will ask for the witness' knowledge when he was at these pools, as to the size of the models.

A. When I was at the Denney pool at Dumbar-ton they were using models  $3\frac{1}{2}$  feet long. At the testing tank in England they were using models about twelve feet long, and in the testing tank at Hofschule, in Germany, they were using models in the neighborhood of 15 feet. Their distances were meters, I don't remember the exact meters.

Q. At the last session of court, Mr. Dickie, you were asked what your opinion was as to the speed of the "Silver Palm" at the time of the collision, and in reply to that question you said that she was going about between 5 and 6 knots per hour. On what figures did you base that estimate?

A. At the time I made that answer I did not have before me a calculation which I had developed

(Testimony of David W. Dickie.)

following a series of tests made under my supervision of the "Silver Palm." During the adjournment of court I have checked those figures and found that my figure was subject to correction, in that my figures showed the "Silver Palm" at the time of the collision was making somewhere between  $7\frac{3}{4}$  and  $8\frac{3}{4}$  knots per hour.

Miss PHILLIPS: I move to strike out the whole of the witness' last answer. He has not shown to be qualified to so testify. He [631] was not on board the ship at the time of the collision. Counsel is now offering his testimony to contradict the testimony of the captain of the "Silver Palm," the third officer of the "Silver Palm," and her engineers. He certainly is not shown qualified to so testify, and I move to strike out his testimony.

Mr. LILLICK: I would like to be heard. The witness is not being put on for the purpose of contradicting the testimony of our officers or crew. The witness has been asked the question because he was asked that question by the Court and not by me, and the witness, after the adjournment of Court, in going over the computation he theretofore made, came to the conclusion that he had made a mistake, and I have a perfect right to explain that mistake. I am not putting the testimony in for the purpose of contradicting any estimates of speed made by other witnesses on my part.

Miss PHILLIPS: Then I withdraw the objection. I thought that was your purpose. I withdraw my objection.

(Testimony of David W. Dickie.)

Mr. LILLICK: Q. Does the computation that you have made giving the speed of  $7\frac{3}{4}$  to  $8\frac{3}{4}$  knots per hour take into consideration the draft of the "Silver Palm" on the day of the collision, and is the speed mentioned by you, in your conclusion as to the speed which the "Silver Palm" was actually making, that which she was making when she actually collided with the "Chicago"?

A. Yes.

Miss PHILLIPS: I renew my objection. I thought counsel was trying to help the witness out of a very bad hole.

Mr. LILLICK: I beg your pardon, it is not fair to say I was trying to help the witness out of a bad hole.

Miss PHILLIPS: I have not made my point clear. I have just made an objection to the witness testifying as to what he thought the speed of the "Silver Palm" was on the ground that he was not qualified to answer, and counsel explained, and I withdrew my objection. Now he is proceeding along that line, and I want to re- [632] new my objection, which is that he is not qualified to testify on the "Silver Palm's" speed.

Mr. LILLICK: I withdraw the question.

Q. After the "Silver Palm" was repaired, Mr. Dickie, did you participate in tests made with respect to her speed?

A. I did.

Q. Where was that test made?

(Testimony of David W. Dickie.)

A. It was made out between the Lightship and the Farallone Islands.

Q. On what date was the test made?

A. December 20, 1933.

Q. What time in the day?

A. Between 11:30 in the morning and 12:45 in the afternoon.

Q. What was the draft of the "Silver Palm" at the time?

A. 15 feet 4 inches forward, 25 feet 2 inches aft, and 20 feet 3 inches mean draft.

Q. What was the purpose of the test?

A. The purpose of the test was to determine the time for the engines to start going astern, the time for the ship to stop and the distance that the ship run up to the time that she stopped in the water.

Q. At what speed did you commence making the tests?

A. At 13½ knots.

Q. How did you conduct them?

A. We conducted three tests. The first one was made by starting the ship off at 13½ knots, and turning 108 revolutions; the second officer took bearings on the Lightship and we ran the ship till she came to rest, and when I said "Mark," which indicated that the ship was stopped, he took another bearing on the Lightship, giving us the three sides of the triangle. The first side was obtained by the bearing on the lightship, the hypotenuse of the triangle was obtained by the second bearing on the

(Testimony of David W. Dickie.)

Lightship, and the third side of the triangle was obtained by the logged distance, and we likewise had a 90-degree angle in the first case with respect to the Lightship, and our course, and we took the angle between the line from the ship to the Lightship and the center line of the ship at the end of the course. The [633] second test was performed by means of boxes. I think I had some 200 cardboard boxes about  $3\frac{1}{2}$  feet long, possibly 18 inches wide and 16 inches high, and I formed them up into a square so that they made a presentable object. I stationed second officer Sheldrake, of the ship, on the after navigating bridge, Captain Cox and the third officer were stationed on the bridge, and the Malay quartermaster was at the wheel, and at the moment when I said "Mark" Captain Cox blew a whistle and immediately the bow down on the deck below threw a box overboard. When this box passed the second officer on the navigating bridge aft, which was 312 feet away, he blew a whistle, and instantly the captain blew another whistle and another box went overboard, and this process continued, box by box, until the last box went overboard, whereupon I rushed down the ladder and followed the boxes along, noting the time that the box passed certain stanchions and certain places on the ship, and I afterwards went and measured this distance back to the bridge, so that we had the simultaneous time taken by myself on the bridge and of the second officer, Sheldrake, aft, and the distance between,

(Testimony of David W. Dickie.)

the final distance from where the box came to rest and our position on the bridge and the compass course.

Q. What was done about the engines?

A. At the time of the first signal the third officer, Stanley, threw the telegraph of the engines into reverse, and we listened to the exhaust of the engines, and it indicated by a slight noise about the equivalent to a polite sneeze at a lesson service that it had started to reverse, and we took the time at that moment. In the meantime, when the engine got going I came back and counted the revolutions of the engines through a very faint noise that you could just hear on the bridge. This was very hard to distinguish when the wind was going against us. On the third test it was conducted with relation to the boxes and the taking of times exactly as No. 2, but with [634] this exception, that at an interval of time between 45 and 50 seconds, due to a prearranged signal, the captain order the Malay to hard astarboard the rudder, and the ship started to swing on her course to starboard. With respect to the boxes on the first test, the boxes were at an absolutely straight line, as if we had drawn a chalk line along the surface of the ocean and placed the boxes on that line, and on the second test the boxes were in an absolutely straight line up to the time that the rudder was put hard astarboard. Now, after the rudder was put hard astarboard, I took reading of the compass at intervals of 15, some-

(Testimony of David W. Dickie.)

times 17 seconds, just as I could get to them, and still take the other data, and when I had finished I plotted a curve through these readings and then wrote off the 10-second intervals.

Q. What did you find with respect to how long after the signal Full speed astern was given to your engine-room that it was till the engines came to a stop?

A. The average time to stop the engines was two minutes and fifty seconds.

Q. What did you find with respect to the distance covered when the signal Full speed reverse was given until the vessel came to a stop in the water?

A. The average distance run—this is the average of all of the tests—was 3158 feet.

Q. What was the wind?

A. The wind was behind us, or astern of us in one test; we were running into the wind the other test. The wind was blowing at that time about 11 miles an hour.

Q. What did you find with respect to the time that elapsed until the time the "Silver Palm" came to a full stop in the water?

A. The average time was four minutes fifty-eight seconds.

Q. At what speed through the water did these tests show that the "Silver Palm" engines had stopped so that they could be reversed?

A. 6.02 knots.

(Testimony of David W. Dickie.)

Q. Where were you on the "Silver Palm" when these tests were made? [635]

A. I was on the bridge.

Q. Who gave the orders under which the vessel was operating?

A. In No. 1 test the Captain gave the orders; in No. 2 and No. 3 *the* tests, through an arrangement by Mr. Geary, I was to give the orders.

Q. How were the signals sent to the engine-room?

A. The signals were sent to the engine-room by means of the engine telegraph.

Q. Who *was the* helm when the experiments were made?

A. A Malay quartermaster.

Q. How were the orders given to the helmsman?

A. The orders were given in English.

Q. Did you have any difficulty with respect to the helmsman obeying orders?

A. No. At the end of Test No. 1 the "Silver Palm," after the test was finished and the vessel came to rest, the "Silver Palm" started to swing, and I asked the Malay quartermaster to give me the course, as I took down the time. Subsequent to one of the tests I asked him what the course was and he replied in English South 57 degrees west. I checked that and found it correct. Later I again asked the Malay quartermaster what the course was, and he said in English South, 62 west, which I found was also correct.

(Testimony of David W. Dickie.)

Q. Did he or did he not execute orders promptly?

A. He executed them absolutely promptly.

Q. With respect to the opportunity you had to observe the officers of the "Silver Palm" on this test, what is your opinion as to their efficiency?

Miss PHILLIPS: Just a moment, that is objected to. That is asking the opinion of the witness on efficiency. Counsel made the objection when I was examining "Chicago" witnesses on the question of efficiency, and asked each time what the witness knew of the efficiency. [636]

Mr. LILLICK: I will accept counsel's suggestion. What do you know about their efficiency?

Miss PHILLIPS: Just a moment, that is objected to, the witness is not qualified to testify to that.

Mr. LILLICK: I withdraw the question. Q. In making these tests, Mr. Dickie, did you make any allowance in your computation for the difference in draft?

A. I did make an allowance.

These times and distances I have given are the actual times that have been listed from the tests, themselves, and I have the other times if you are interested, for the making of the correction for the draft.

Q. What relation did that bear to your estimate of  $7\frac{3}{4}$  or  $8\frac{3}{4}$  knots speed on the part of the "Silver Palm" with respect to the correction you made?

(Testimony of David W. Dickie.)

A. With respect to the  $7\frac{3}{4}$  to  $8\frac{3}{4}$  speed I made all the corrections for draft and for everything else connected with it.

Mr. LILLICK: That is all. You may cross-examine.

Cross-examination.

Miss PHILLIPS: Q. Mr. Dickie, did you form any conclusion as to the angle between the axis of the "Silver Palm" and the axis of the "Chicago" at the moment of impact?

A. I did.

Q. What did you make?

A.  $34$  degrees.

Q. You think the "Chicago" was moving ahead at the time of impact, do you?

A. Yes.

Q. Will you describe what you think would happen when the bow of the "Silver Palm" pierced the hull of the "Chicago"?

A. I have described that in my direct examination.

Q. I want you to describe it again. In substance, was it pierced clean like a razor?

A. In the first instance, according to the speed that I calculated for both vessels, the "Chicago" was proceeding ahead in the water, and at the moment of impact the first action would be a shearing action, which would shear away part of [637] the structure of the "Chicago" as the "Silver Palm" was proceeding into the damaged part.

(Testimony of David W. Dickie.)

Q. By shearing off, what do you mean, like skidding and scraping?

A. Shaving it off like a person shaves in the morning.

Q. She would shave off the plating?

A. The structure of the ship, that structure on the "Chicago" is made of very light material, in order that the ship may make the speed that she makes.

Q. Let me get this: You are assuming that the "Chicago" was going ahead around six knots—that the "Silver Palm" was going somewhere between  $7\frac{1}{2}$  and 8 knots?

A.  $7\frac{3}{4}$  to  $8\frac{3}{4}$  knots.

Q. Somewhere around there?

A. Yes.

Q. You were telling what is going to happen when she first struck, that is, she is going to shear off some of the structure of the "Chicago"?

A. Yes.

Q. All right, go ahead.

A. Then as the structure shears off and starts to crumple up it will pile the structure of the "Silver Palm" over to the left and bulge it out on the port, and as it comes further along and the surface becomes larger on the front of the "Silver Palm," it will tend to crumple the "Silver Palm" and crumple the material into the aft side of the cut.

Q. What I meant particularly in asking you what would happen when the bow of the "Silver

(Testimony of David W. Dickie.)

Palm" pierced the bow of the "Chicago" was, what is going to happen to the "Chicago"? Let me see if I can get that clear.

A. If you will permit me I think it can be shown here.

Q. Just a minute, I have in mind what I want to ask you. This is the forward part of the cut on the "Chicago," and this is the after part. Now, in striking that, which side is cut first of the "Chicago"?

A. The forward part is cut first.

Q. The forward part is cut first, of course. Now, my question is, do you think that there is going to be a sharp piercing of the side, [638] is it going to be absolutely clear-cut?

A. No, it is going to tear across like that, like moving my hand to the left across the photograph, it is going to tear the structure of the "Chicago" and pile it up here.

Q. There is going to be a preliminary scraping and skidding before it penetrates?

A. Yes.

Q. Is that right?

A. Yes, it shows on the model here. This part will be torn away, that is, the forward part.

Q. And then as it penetrates, the material on the "Chicago" that is cut has got to pile up somewhere, it will pile up on the after side?

A. It will pile up on the after side.

(Testimony of David W. Dickie.)

Q. What you would call a corrugated pleating would pile up on the after side?

A. Yes.

Q. Suppose the "Chicago" was stopped or almost stopped, wouldn't it be true that the forward part of the cut would be comparatively sharp and that the material of the "Chicago" would pile up on the after side?

A. No.

Q. Why not?

A. If the "Chicago" were at rest and the "Silver Palm" were proceeding ahead—I will draw it. I have drawn the line P-Q to represent the side of the "Chicago" and answering your question on the assumption that the "Chicago" was at rest, and that the "Silver Palm" was proceeding ahead, the material of the "Chicago" would be driven in toward the center line of the "Chicago" in the form of the two lines which I have *no* marked R-S.

The COURT: That does not seem hardly the angle of impact between the two ships.

A. This would be parallel with the sides of the "Silver Palm." The angle of impact between the two ships, as I have figured it out, was 34 degrees, so I will re-draw that line and put this line in red to more nearly approximate that, and then mark that "P-Q" in red; the crushed-up part of the "Chicago" will still form in like a "V" parallel to the line of the [639] sides of the "Silver Palm."

Miss PHILLIPS: Q. Then your idea is that the "Chicago" is at rest and with the "Silver Palm"

(Testimony of David W. Dickie.)

here going ahead, that the material of the "Chicago" would bend right straight back at an even "V"?

A. There would be any accordion pleating piling up on the after side.

Q. Where would all of this broken material get to?

A. It would be crushed in in the form of a "V" and would separate out as the bow went in.

The COURT: Wouldn't there be a pressing in as well as aft when it strikes on the angle of the degree that you have spoken of?

A. Yes.

Q. In other words, it seems to me that it would be pressing in as well as back.

A. Yes.

Q. Therefore, there would not be any chance to get that accordion pleating?

A. There would be some accordion pleating on the after side of the cut, but nothing to compare with this. I have seen quite a number of these collisions and the material piles to one side instead of crumpling up into a mass.

Miss PHILLIPS: Q. Mr. Dickie, materials bend or break under tension, don't they?

A. Yes.

Q. And when there is compression they pile up?

A. That is correct, but in this case here your piling up would draw the material in tension, because the distance from the point that I am marking

(Testimony of David W. Dickie.)

“O” and the other point I am marking “M”, the distance from O across that gash to the point M is shorter than the distance around. The break would bend M so that the material would stretch rather than crumple up.

Q. Well, now, Mr. Dickie, after the prow of the “Silver Palm” penetrated the “Chicago’s” side, doesn’t the damage to the bow of the “Silver Palm” depend a good deal on the character of the [640] structure encountered inside of the hull of the “Chicago”?

A. Yes. According to that photograph that is all gouged.

Q. Supposing there was a cargo of cheese in there, you surely would have something different happen to the bow of the “Silver Palm” than if it encountered a cargo of scrap iron, wouldn’t you?

A. Yes.

Q. There is bound to be?

A. Yes.

Q. And that would be true whether the “Chicago” was moving or at rest?

A. No.

Q. Either one?

A. No, it would not be; if the “Chicago” was at rest and the “Silver Palm” ran into it I would expect the bow of the “Silver Palm” to be slightly deformed and to have a hole punched through the floor where your deck was.

(Testimony of David W. Dickie.)

Q. Regardless of what kind of material she encountered inside of the "Chicago," whether the "Chicago" was full of cheese or scrap iron?

A. No, but I am assuming the structure of the "Chicago" to be the normal structure of a ship, as you usually find.

Q. But I am asking you this question and I want you to answer the question I put to you? My question is whether the damage to the bow of the "Silver Palm" does not depend to a great extent on the character of the structure encountered inside of the "Chicago"?

A. It depends to some extent, yes.

Q. That is true whether the "Chicago" is moving or at rest, isn't it?

A. The damage to the "Silver Palm" will be entirely different if the "Chicago" is moving than if the "Chicago" is at rest.

Q. You do not answer the question I put to you. Now, just try to answer the question I put to you: Isn't it true that the character of the damage to the prow of the "Silver Palm" is going to depend to a very considerable extent on the character of the structures encountered inside the hull of the "Chicago"? Answer that "Yes" or "No."

A. The answer is "Yes." [641]

Q. If the "Chicago" is moving won't the damage to the prow of the "Silver Palm" be affected by the character of the structure encountered inside of the hull?

A. Yes.

(Testimony of David W. Dickie.)

Q. If the "Chicago" is at rest doesn't the character of the structure encountered affect very considerably the bow of the "Silver Palm"?

A. Yes.

Mr. LILLICK: Do you understand you have a right to explain your answers if you wish after you say "Yes" or "No"?

A. Oh, yes, I understand that. The way she asked the question the second time was entirely different from the way she put it the first time.

Miss PHILLIPS: No, I put exactly the same question, only I had them combined in a single question and I separated them because you did not seem to follow me.

A. I followed you, but I could not answer your first question the way you wanted it answered.

Q. I think the record will bear me out that I combined the two questions and then separated the question which I put afterwards in the form of two questions, that is, if the damage to the bow of the "Silver Palm" is going to depend to a large extent upon the character of the structures encountered inside of the hull of the "Chicago", and that is true whether the "Chicago" is moving or at rest. I broke that up into two questions.

A. When you break it up into two questions my answer is all right, but when you put the two of them together my answer would have to be modified.

(Testimony of David W. Dickie.)

Q. All right, go ahead and explain.

A. The structure of the "Chicago" is going to have an effect on the "Silver Palm," but the effect on the bow of the "Silver Palm" will be different if the "Chicago" is moving than it will be if the "Chicago" is at rest.

Q. But you still say that whether the "Chicago" was moving or at [642] rest, either one, the character of structures encountered is going to have considerable effect on the damage to the "Silver Palm's" bow: Is that right?

A. Yes, it would have a considerable effect, but a different effect.

Q. Now, doesn't the final position of the bow of the "Silver Palm" depend a good deal on what the bow hits last?

A. No.

Q. Why not?

A. It depends on the bow hit all the time as it passed through the entire collision.

Q. Well, let us see if we can follow that here: If the bow of the "Silver Palm" pressing the "Chicago" meets structures that are not very resistant and then meets a structure that is very resistant, do you mean to say that that last very resistant structure won't affect the bow more than it was previously affected by the non-resistant structure?

A. It will add to the damage that has already been done.

(Testimony of David W. Dickie.)

Q. Yes, but I mean won't it affect the way the bow is turned?

A. If the previous damage has turned the bow in any one direction the auxiliary damage will add to that destruction.

Q. I think we can illustrate that on this diagram.

Mr. LILLICK: Miss Phillips, might I, before you draw the diagram, suggest that it would be better to put it on paper rather than on the board, because then we will have a record of it?

Miss PHILLIPS: I think it can be copied easily.

Q. Now, Mr. Dickie, if a breakable structure comes at a hard structure, say at an angle of 35 degrees, or 45 degrees, or whatever degrees you want, do you say that invariable this structure is going to bend inward, if this structure is moving?

A. If the horizontal line is moving it will tend to push the diagonal line over in the direction in which the horizontal line is moving.

Q. Mr. Dickie, assuming you have a straight line A-B, and we have a structure C-D striking at an angle, you say that the straight [643] line A-B, if it is moving, the structure C-D is going to bend inward in the direction of the line A-B: Is that correct?

A. Yes, that is correct.

Q. Do you say that is going to be invariable?

A. Yes.

(Testimony of David W. Dickie.)

Q. And in this structure the bend is going to come like this and the bulge is going to come on the side next to the structure A-B: You say that is invariably correct?

A. Yes, that is correct.

Q. Whereas if the structure A'-B' is stationary and the structure D-C hits it, you say that the structure D-C is going to bend?

A. If the structure D-C is a ship it will penetrate into the structure A'-B', and will push the material in in the form of a V.

Q. You have not answered my question. I am asking you as to the bending of this structure C-D, how that is going to bend. Is that going to bend inward or in the direction toward the structure it hits or is it going to bulge outward away from the structure?

A. If the structure A'-B' is at rest and the structure D-C strikes A'-B', the structure D-C will penetrate the structure A'.B'. The results more or less are a little bit confusing, because the structure of the "Silver Palm" at the bow is built up solid with heavy brackets and decks spaced about at the most six feet apart. It is very strong.

Q. I am asking you a general question on stresses and strains, and I am asking you whether or not it could ever be said to be an invariable rule as to breaking inward in the first diagram A-B. Let us go over it again. Here is a structure A-B and it is in motion; we will assume the structure D-C hits

(Testimony of David W. Dickie.)

it; you would *stay* that the structure D-C is going to bend in the direction that A-B is moving ahead?

A. Yes, that is correct.

Q. And that the bulge is going to occur on the side toward the structure A-B?

A. Yes.

Q. You say that is invariable?

A. Yes, that is invariable. [644]

Q. You say that applies in the case of ships?

A. Yes.

Q. That the bend in the structure D-C is always going to be inward on the side toward the structure A-B?

The COURT: Q. Assuming that the motion is in the direction of A-B?

A. Yes.

Miss PHILLIPS: Q. And the structure D-C hits it?

A. Yes.

Q. In that second question you say the structure A-B, when stationary and D-C hits it, D-C is going to come right in without bending the structure D-C or without bulging. Is that your testimony?

A. That is my testimony, if I understand the question correctly.

Q. I have repeated it several times and I am quite sure you must understand it.

Miss PHILLIPS: I am going to ask my associate, Mr. McWilliams, if he will, to save a little time, to make a drawing of it and then we can agree on the correctness of it.

(Testimony of David W. Dickie.)

Mr. LILLICK: I would have preferred if you had put the diagram on paper.

Miss PHILLIPS: No, I would rather have it on the blackboard, because I understand it better, and then we can have a copy made. I will ask Mr. McWilliams to draw it and I think we can agree that it is a fair representation.

Q. Did I understand you to say that the starboard anchor of the "Silver Palm" was pressed into her side?

A. Yes.

Q. And the port anchor—I am not quite sure of that, did you?

A. No, the port anchor was driven aft.

Q. Mr. Dickie, if the "Silver Palm" struck the "Chicago" right at the point of her forward gun turret, won't you concede that the starboard anchor would, by that very hitting at that point, be driven in regardless of whether the "Chicago" was moving, or not?

A. No, I won't concede that.

Q. Now, tell me what caused that anchor to be pushed in. [645]

A. By using the models of the "Silver Palm" and the "Chicago"—I don't know what the exhibit numbers are—

Q. This "Silver Palm" model is not in evidence. The "Chicago" is Exhibit 1.

A. Using Exhibit 1, if the "Silver Palm" came straight in there—the draft is not right on this—

(Testimony of David W. Dickie.)

Mr. LILLICK: May it please the Court, we are now in the situation where that model is being put in a position where I was fearful it might be put, where witnesses might be confused by its use. It is not a model of the "Silver Palm" and we have used it only in a general way. Now the witness is being asked with respect to it and particularly as to where the anchors are on the bow. I don't know how to meet this.

Miss PHILLIPS: Q. Let me ask you, do you know where the "Silver Palm's" anchors were on her bow?

A. Yes.

Q. Could you locate them?

A. Yes, on the photograph I could locate them.

Q. Let us have the photograph. Here is another story of it. Can you locate them on the photograph? Suppose you mark them in red pencil.

A. I am marking Respondent's Exhibit No. 14 with a red pencil. C is the starboard anchor and D is the port anchor.

Q. If the "Silver Palm" hits the "Chicago" such that her bow strikes against this gun turret, isn't it inevitable that anything sticking out on the starboard side of the "Silver Palm" is going to be pressed in?

A. No, because you have got the anchor above the deck of the "Silver Palm" there.

Q. I do not care if the "Chicago" was moving or not, if the "Silver Palm" strikes on that angle and

(Testimony of David W. Dickie.)

her bow gets right against that turret isn't it inevitable that that anchor is going to be pressed into the side of the "Silver Palm"?

A. There is a possibility.

Q. What is going to keep it out, what is going to keep it from [646] being pressed in?

A. The way you have got it there it would not come in contact with the turret.

Q. I am asking you if the bow of the "Silver Palm" presses right in until it hits the forward corner of that gun turret, and gets between the gun and the turret, isn't that inevitable, that that starboard anchor is going to be pressed into her side?

A. Not necessarily.

Q. Tell me why not?

A. Because the anchor is back from the stem probably six or eight feet, and you would have to crush the bow in six or eight feet, and the anchor would be pressed aft instead of being pressed in.

Q. Striking there now, this bow is going right into this deck, and what would keep this starboard anchor, whether it was six feet from the stem or not, from being pressed in, if the bow of the "Silver Palm" punctures that hole?

A. If the bow comes up against the turret it will crush the bow in and will crush the anchor aft—the anchor on this picture of the "Silver Palm" is crushed from starboard over to port.

Q. We are talking about the starboard anchor. What is going to keep it from being pressed right

(Testimony of David W. Dickie.)

into the side if the bow if hitting against the turret?

A. Because there is nothing touching the anchor. You have the anchor on the "Silver Palm" above the line of everything there.

Q. Oh, no, I have not put it there. If anybody put it there you are the one that put it there.

The COURT: The difficulty there is in the height. Are these supposed to be the same height?

Miss PHILLIPS: They are drawn to scale.

The COURT: They seem to be raised on some device which raises the bow up to a point where the top of the bow is higher than the first gun turret. Is that the way they actually stood *at* [647]

Miss PHILLIPS: These two ships are drawn exactly to the same scale.

The COURT: Are they out of the water the same amount, so that the bow should be that much higher than the "Chicago"?

Miss PHILLIPS: As to that the testimony of the "Chicago" witnesses was that the bow of the "Silver Palm" struck against the heavy gun turret.

The COURT: But the bow is much higher above the deck of the "Chicago." Is that the way it was supposed to be?

Miss PHILLIPS: I don't know specifically.

The COURT: The whole thing is, the witness is contending that that is above the deck. Is that correct?

A. Yes, the anchor on that ship, if those models are anywhere near to scale the anchor must come above the deck of the "Chicago".

(Testimony of David W. Dickie.)

Miss PHILLIPS: Q. How far back is it from the bow of the "Silver Palm"?

A. About eight feet.

Q. Then my question is, what is going to keep that anchor from being pressed right in if the starboard anchor of the "Silver Palm" is 6 feet from her stem, and 8 feet from the top part of her deck, if the "Silver Palm" penetrates the side of the "Chicago" to a distance of approximately 18 feet, striking against this, what is going to prevent that starboard anchor from being pressed in?

A. The anchor, in that case, would have passed along the top of the deck of the "Chicago" and the turret, as it came in contact with the stem, would have crushed the stem.

Miss PHILLIPS: We will have to have a little more testimony on that.

The COURT: When you are speaking of the turret, are you speaking of the base of the turret rather than the part which revolves the gun, or the base upon which the turret would rest, the heavy metal? [648]

Mr. LILLICK: I had the same idea.

The COURT: I had no idea that you were claiming that the turret with the gun in here was struck

Miss PHILLIPS: The Court I thought it was a solid base there, which must be had to maintain a turret of that weight.

(Testimony of David W. Dickie.)

Miss PHILLIPS: Admiral Laning and Admiral Simons testified that the very foremost point of the bow struck this big gun turret, and I will have further testimony on that in rebuttal to establish the way the bow caught up between the gun and the turret.

Q. You say that the starboard anchor of the "Silver Palm" is how many feet from the stem bar?

A. Approximately eight feet. I have not located it exactly.

Q. How many feet from the level of the fore-castle?

A. I could get that approximately here. The starboard anchor of the "Silver Palm" as shown on Respondent's Exhibit No. 19—

Q. Just a minute, there is a blueprint, so you can probably get it from there exactly.

A. I had the blueprints, but I gave them back to Captain Ensor.

Mr. LILLICK: We will get them during the recess.

Miss PHILLIPS: I think it better to have the exact measurements from the blueprints, so we will get them when they are here.

Q. Isn't it entirely possible that the bending of the bow of the "Silver Palm" to port would be effected if her bow was rotated to starboard at the moment of impact?

A. Yes, if she were going fast enough.

Q. That is if at the time she hit her helm was over so that she was starting to turn to starboard

(Testimony of David W. Dickie.)

wouldn't the bending of the bow to the port be explained by that fact?

A. Yes, and no. I will put it in both ways and then you can get it clear. A ship of about that size will turn through an angle of about 100 degrees in approximately six minutes, more or less, so that the movement of the bow would be very slow. If you are content to allow the bow [649] of the "Silver Palm" to be swung to starboard as slowly as that, my answer would be that the crushing of the "Silver Palm" would be caused by the turning of the bow to starboard.

Q. You did not understand my question, apparently. I asked you if the fact that the "Silver Palm" was turning, if it were found that the "Silver Palm" was turning to starboard, rotating to starboard as she punctured, whether or not the bending of the bow to port would not be caused by that very fact?

A. If you would wait long enough it would be caused that way, but it takes a long time.

Q. Mr. Dickie, I am very much interested in this sketch of yours, Exhibit 18, particularly this straight line. I do not believe you have marked it in your exhibit, but this line which is under the letter B in red, and proceeding down the diagram quite some distance, according to the scale of your sketch, this straight line is how many feet long? Have you a ruler?

A. That is about  $13\frac{1}{2}$  feet.

(Testimony of David W. Dickie.)

Q. Tell me where this line extends that you have described there?

A. It is on a line with the second deck and extends from this point in a straight line back to here.

Mr. LILLICK: That did not appear in the record. What do you mean by "this line here"?

A. It extends from the point that I am marking with an "X" on Respondent's Exhibit 19, and extends in a straight line aft to the point I am marking "Y" on the same exhibit.

Miss PHILLIPS: Can you tell me what the height above the keel was of this line?

A. It is approximately 40 feet, as near as I could measure it from the photographs. When we get the blueprint I will give you the exact distance.

Q. Referring now to the red line appearing on your sketch Exhibit 18, being the straight line appearing under the initial D?

A. Yes, extending from D to Z. [650]

Q. That is the line of damage appearing on what deck?

A. No. 2 deck.

Q. No. 2 deck?

A. Yes.

Q. Does that damage extend down to 3 deck? Have you your notes here?

A. In putting this in it extends down to just No. 3 deck.

(Testimony of David W. Dickie.)

Q. Could you draw a provisional sketch showing the damage on the second and third deck? Would it be possible for you to do so?

A. I do not believe I could do it accurately enough to make it show properly. This is the second deck I have drawn here, and to draw the third deck I would have to get my notes and spend some time on it.

Q. What I am getting at is this: This is a straight line of damage, you say, from the second deck down to the level of the third deck, or did I misunderstand you on that?

A. You must have misunderstood me. This line between D and Z represents an approximate straight line, and that was on the level of the second deck, and is shown on the photograph Respondent's Exhibit No. 19 at the point X and Y which I have marked on the photograph. You can see the row of rivets, if you look at the photograph carefully, and they are indicated quite plainly, and I followed the row of rivets right across the ship and marked the plates where the second deck comes out on the port side of the ship.

Q. Perhaps the blueprint will help us on this. What is the height between the second and third decks, do you know, or do you recall?

A. I do not remember exactly. I have left that off of the drawing. I think it was nine feet, I am not sure.

(Testimony of David W. Dickie.)

Q. Was the third deck in the way of the damage?

A. The third deck in the way of the damage?

Q. Yes.

A. There was the forecastle deck, the upper deck, second deck, and third deck.

Q. I am now trying to get the character of the damage on the third deck as compared with the second deck. Does this straight line [651] indicate that?

A. No. On the third deck the character of damage is a little bit different. I can show it to you approximately from this photograph.

Q. I do not believe it would show anything, at all. What I would like to have you do would be to draw a sketch of the damage on the third deck and on the second deck, so that we could get a picture of the two.

A. I may be able to do that from the photograph. This sketch was made, as I testified to, by taking angles from across the deck and using the dock as a base line and that whole thing was laid off by means of angles.

Q. That does not represent a sketch made after going on board the ship and comparing the damage there?

A. No, this was made from the outside of the ship from the dock. I stood up here and I established the angle along this cut, and established the angles across here, and when I got the angles all laid off I started in to count the rivets; you could see

(Testimony of David W. Dickie.)

the rivets where they were broken, and then after I had counted the rivets and marked the number of rivets, and all that sort of thing, then I went to the rule and checked up the rivets to see that I had the right size and right placing of the rivets.

Q. What I am getting at is this, this Exhibit 18 is a floor plan, apparently you have superimposed one floor on top of the other.

A. That is right.

Q. Had you ever been on board the ship to ascertain whether this corresponds to the damage on the ship?

A. On the inside?

Q. Yes.

A. No, just on the outside.

Q. I am still worrying about this straight line which you say is the second deck damage. Does that represent the actual pushing of the inside of the "Silver Palm" at the second deck, this straight line?

A. Yes.

Q. And the actual pushing in at that point?

A. The actual pushing [652] in from the starboard side of the "Silver Palm" and the distance from the point R up to the point D is measured along this line, and the crooked line from R to D is the same as the distance from R to S and the distance from O on the port side of the second deck to the collision bulkhead No. 166. The distance from O measured around the crumpling of the side

(Testimony of David W. Dickie.)

of the deck line to the point D is the same as the distance from O up to the point S.

Q. So this line D-Z on the third deck represents an actual pushing of the deck at that point?

A. Yes.

Q. And the other side, this line with several bulges, represents the bulging of that deck in that way?

A. Yes.

Q. On that deck?

A. Yes.

Q. That is right?

A. That is correct.

Q. What type of construction is there on the second and third decks? Is there a forepeak tank right at the bow of the "Silver Palm"?

A. Yes, below No. 3 tank, you can see it on the photograph.

Q. That is what I want to get at. Do the second and third decks go through the forepeak tank?

A. No, the forepeak tank is below the No. 3 deck.

The COURT: I think we will take a recess now until two o'clock.

(A recess was here taken until two o'clock p. m.)

(Testimony of David W. Dickie.)

Afternoon Session

DAVID W. DICKIE,

Cross-examination (resumed)

Miss PHILLIPS: Before I forget it, I would like to have this sketch which represents the diagram on the blackboard offered in evidence.

Mr. LILLICK: No objection, your Honor.

The COURT: You agree that is a true picture of that drawn on the blackboard?

Mr LILLICK: I would say otherwise you would have to make a photograph of the drawing.

(The diagram is marked "U. S. Exhibit 18.")

Miss PHILLIPS: May I have the last question and answer read?

The COURT: Read the last question and answer.

(The record was here read by the reporter.)

A. Might I correct that answer? I find that the forepeak tank goes up to the two deck and that No. 3 deck is composed of a plating at the side approximately 40 inches wide, which goes along the ship's side and meets up at the bow in a breast hook.

Q. You might say a little plating along the side of the ship?

A. Yes.

Q. And No. 2 deck—

A. No. 2 deck comes straight through and is water tight.

Q. It is a water-tight compartment?

A. Yes.

(Testimony of David W. Dickie.)

Q. Mr. Dickie, did you get the figures about the location of the anchors?

A. Yes.

Q. Can you give us that now, please?

A. Yes. The turn of the anchor is about five feet from the stem and the after end of the anchor is about nine feet from the stem. The center of the anchor is about five feet below the forecastle deck and the bottom of the anchor [654] is about almost eight feet, not quite, from the forecastle deck.

Q. Can you give me the dimensions of the top of the forecastle deck, from the keel of the ship?

A. From the top of the forecastle deck to the keel of the ship?

Q. Yes.

A. That is, as near as I can get it, 55½ feet.

Q. What would be the distance of the center of the anchor from the keel of the ship?

A. From the center of the anchor to the keel line is about 50½ feet.

Q. Do you know what is the construction of that second deck that comes right straight through to the very stem of the ship? Have you been on board and do you know of your own knowledge?

A. Yes, I was on board the ship.

Q. Then refer to your notes.

A. But I did not go right up into this place because it was occupied, but the second deck on the ship is composed of plates, a large breast of plates

(Testimony of David W. Dickie.)

right in the bow, and then the next plating immediately aft of that goes athwartships with a water-tight hatch down through it, and the next plate runs parallel with the ship's side on each side, and the other plating that joins those two side plates run fore-and-aft.

Q. It is a steel deck, then, is it?

A. A steel deck, water-tight, double riveted.

Q. What is the weight of that plating?

A. It seems to be .44 of an inch.

Q. .44 of an inch?

A. That will give you the average of the covering.

Q. Now, Mr. Dickie, I am going to go back to that sketch of yours, Exhibit 18, and let us look at that again for a minute. The deck structure, I understand you to say that this straight line which we have marked D-Z was bodily pushed back on the second deck: Is that correct?

A. Yes.

Q. Which would account for the bulge back of it?

A. Yes. [655]

Q. That is, the metal pushed back has to go somewhere and it goes into the bulge?

A. Yes.

Q. If you think the "Chicago" was moving ahead at 6 knots or so or more and crushed this back in a straight line like that, how do you account for the fact that it was not pushed away back?

(Testimony of David W. Dickie.)

A. The ships came to rest.

Q. Do you think it was because the structure of the "Silver Palm" at this deck being so placed as you have given it, that it was strong enough to bring the "Chicago" to rest at that point: Is that your explanation of it?

A. Yes, I would say that between the crushing here and the crushing on the "Chicago" that the cushioning eventually brought the ships to rest.

Q. Whereas if the "Chicago" had been as strongly constructed as the "Silver Palm," would it be your opinion that this line D-Z would be further moved back?

A. Yes, the damage would have been greater on the "Silver Palm" if the "Chicago" had been made of the same thickness of metal as this vessel.

Q. So it is because the "Chicago" was lightly constructed there that accounts for this damage line not being moved further back?

A. Yes.

Q. If she had been in fact very strongly constructed at this portion there would not be any doubt in your mind but that this line would have moved further back and this bulge, instead of being where it is, would have moved several feet the other way?

A. It would have moved further back. I would not want to express an opinion as to how far back it would have moved, but this line most certainly would have moved further back if the "Chicago"

(Testimony of David W. Dickie.)

had been built as strong as this ship is, of the same thickness of material.

Q. So then you might also say that it was because of the strength of the "Silver Palm's" construction here and her plates to withstand the pressure of a lighter body that accounts for this [656] straight line: Is that about it?

A. You mean why that line is straight?

Q. Yes.

A. The line is straight because of the cushioning and folding of the material of the "Chicago," acting as a cushion, that it happened to be in a straight line.

Q. You don't think there could be any structure of the "Chicago" which in itself could account for this straight line?

A. No, there was no factor that entered into the picture, that I see, that would make that a straight line, in preference to any other. It just happened that the gathering of the material in the "Chicago" into a fold acted as a cushion and caused that to be in a straight line.

Q. I want to understand again, and I am not sure that I have got your testimony this morning; if I am repeating too much I beg to have you pardon me. If the "Chicago" was stopped, or almost stopped, when the "Silver Palm" struck her, would you say that the accordion pleating on the "Chicago" would have been on the forward part of the cut?

(Testimony of David W. Dickie.)

A. No, I would say that there would be no accordion pleating appearing on either side of the cut. My judgment, from what I have seen on other vessels that had been in collision, my opinion would be that the plating would be opened out into a V and would be lying comparatively straight along each side of the cut with an opening in the depth far under.

Q. With each side clean-cut?

A. With each side of the plate bulged out.

Q. By the way, you have spoken of your experience in collision cases. Have they been for the most part in merchant vessel collisions?

A. This is the only case that I have been on that involved a warship; the only ones that I investigated in other cases were stranding cases, I have investigated the "Tacoma" and the destroyers down South, and the submarine up north. There was a personal friend who raised that submarine.

[657]

Q. Mr. Dickie, in merchant vessels, when the prow of one ship strikes into the side of the other, would you say that the structure which was encountered inside was for the most part homogeneous or heterogeneous?

A. No, the structure inside of a merchant ship is usually at intervals of anywhere from eight feet to twelve feet, depending on the type of the ship. In between the eight-foot space of the deck three would usually be a stringer. In between the 12-foot space of the deck there would usually be two string-

(Testimony of David W. Dickie.)

ers, depending on the type of stringers of the ship. Wherever a collision occurs between two merchant ships it will usually be found that where the decks occur, if the ship that is struck is standing still you will find the ship that strikes will have the shell plating punctured on the line of the decks and the shell plating will usually be corrugated in between that.

Q. That is very clear. It would be true, then, that the merchant vessel arranges her hold with a plate going athwartships at regular intervals without very much division up of the space on the decks, themselves? Do you follow what I have in mind? I don't know whether I am clear or not.

The COURT: The bulkheads.

Miss PHILLIPS: The bulkheads.

A. The bulkheads which divide the ship in a fore-and-aft direction are usually spaced about 48 to 56 feet, depending on the structure of the ship and her structure numbers or numerals, as we call them. In a tanker they are usually in the neighborhood of 28 feet on the old tankers. I am not so sure about the new tankers.

Miss PHILLIPS: Q. So that in a merchant ship, if I get your description, which seems to be very clear, we have a division between decks of 8 to 12 feet, depending upon, I suppose, the use the particular vessel is put to, bulkheads coming athwartships at intervals of 50 feet or thereabouts?

A. Yes. [658]

(Testimony of David W. Dickie.)

Q. But not a subdivision of each hold to make smaller compartments?

A. No.

Q. Is that right?

A. The only case where the holds are subdivided into smaller compartments is where they have such cases as carrying bullion, they have a strong-room, or a refrigerating ship will be divided up into compartments because they want to carry different kinds of fruit in one compartment than in the other.

Q. Mr. Dickie, might I ask you again, did you say the damage which was suffered by the "Silver Palm" could not have been caused if the "Chicago" was stopped or almost stopped?

A. The nature of the damage on the "Silver Palm" could not have been caused in this form if the "Chicago" were stopped, for the reason that the "Silver Palm" was swinging to starboard at the time of the accident about three feet in five seconds, or about one-third of a knot an hour, whereas the "Chicago" was going ahead about 5 knots an hour, or 15 times as fast as the "Silver Palm" was advancing in an hour, and for direction between  $7\frac{3}{4}$  and  $8\frac{3}{4}$  knots an hour, which is in the neighborhood of 24 or 25 times as fast.

Q. That is what I was trying to get at. That is, when you say that the damage to the "Silver Palm" could not have been caused if the "Chicago" had stopped or almost stopped, what speed are you allowing the "Silver Palm" when you say that?

(Testimony of David W. Dickie.)

A. The "Silver Palm" was going ahead in a fore-and-aft direction between  $7\frac{3}{4}$  and  $8\frac{3}{4}$  knots an hour, but she was swinging to starboard; the bow of the "Silver Palm" was swinging to starboard about one-third of a knot an hour or less, and the "Chicago" was going ahead, according to my figures, between 5 and 6 knots.

Q. What I wanted to get at was your estimate of the speed of the "Silver Palm." When you say that this damage could not have been caused if the "Chicago" was stopped, or almost stopped, I was trying to get from you what speed you are giving the "Silver Palm" when you [659] say that, when you are estimating it  $7\frac{1}{2}$  to  $8\frac{1}{2}$  knots an hour?

A.  $7\frac{3}{4}$  to  $8\frac{3}{4}$  knots in a fore-and-aft direction, but the speed of the bow going to starboard was so slow in comparison with the other speed that it cancels out.

The COURT: What would you imagine was the rudder bearing, or the helm bearing on the "Silver Palm" at the time she struck?

A. Hard a-starboard.

Q. Hard a-starboard?

A. Yes.

Q. She was swinging and it was hard a-starboard?

A. At the time of the collision.

Q. She turned about how much, about 35 degrees?

A. No, she would have turned, that is, from the captain's testimony, she turned from 156 to 168

(Testimony of David W. Dickie.)

degrees, but the speed at which the bow was moving was only one-third of a knot.

Q. In other words, what I am trying to find out, when the "Silver Palm's" rudder was hard a-starboard, were you given any data as to how she responded?

A. It was not stated.

Q. What is your estimate, going at the speed you indicated, as the speed of the "Silver Palm," with a hard a-starboard, she would actually turn?

A. One-third of a knot an hour.

Q. I cannot understand that, what you mean by one-third of a knot an hour. I want the angle of turn, that is, from going ahead straight. In other words, what was the angle of the turn?

A. She swung from 156 degrees to 168 degrees in thirty seconds, that is 12 degrees in 30 seconds.

Q. 12 degrees in 30 seconds?

A. Yes.

Q. That was your computation?

A. That is my observation from the ship.

Q. That was your observation at the time that you took the ship out to the Farallones?

A. Yes, on the ship.

Q. I have not read any of the depositions, so I thought if you had [660] taken it from somewhere that it was from the depositions. I knew I had not seen it.

Miss PHILLIPS: Q. Then you did not pay any particular attention to the change of the rudder in your calculation because a rudder change is

(Testimony of David W. Dickie.)

inconsiderable in effect when you are comparing it with the forward speed of  $7\frac{1}{2}$  knots?

A. The swing of the ship from the action of putting the rudder hard to starboard is negligible as compared with the motion either of the "Silver Palm" or the "Chicago."

Q. I think I follow you. That is, the kinetic energy engendered by the force of the impact between the two ships is so much greater than the kinetic energy to be derived from the change of rudder that you disregarded the rudder change entirely: Is that it?

A. Yes; it is, roughly, from 15 to 24 times greater due to the motion of the ship through the water than it is due to the swinging of the ship to starboard.

Q. That would be true also as to any particular rudder change on the part of the "Chicago," the same thing there?

A. Yes, the same thing would apply there.

Q. By the way, how do you know that the "Silver Palm" was swinging to starboard at the time of the collision? You don't know it from your own knowledge, do you?

A. No, I took that from the captain's testimony.

Q. That is, from the testimony of the captain of the "Silver Palm"?

A. Yes.

Q. You did not compute that from the results of the collision, though?

(Testimony of David W. Dickie.)

A. The captain's testimony gave me the 156 degrees the course he was on, and the 168 degrees the course he was on at the time of collision. I think I took the ship through the test and when I had brought her from 156 degrees to 168 degrees, as a matter of fact I did not take the information exactly on those figures. I [661] took progressive information and then calculated at the point for 168 degrees.

Q. Mr. Dickie, taking up now the matter of these tests that you made with the "Silver Palm" on the 20th of December. I think you gave the draft of the "Silver Palm" forward as 15 feet 4 inches—kindly refer to your notes.

A. 15 feet 4 inches forward, 25 feet 2 inches aft, a mean of 20 feet 3 inches.

Q. I observe that according to the "Silver Palm's" log at the time of the collision she had a forward draft—I won't say at the time of the collision, I mean at the time of leaving San Francisco at midnight before the collision, that is, eight hours previously, I observe that her draft forward is 22 feet and her draft aft 25 feet 2 inches. That is correct, is it not, according to the log?

Mr. LILLICK: Yes.

Miss PHILLIPS: That would represent a difference of how many tons of cargo or other stores aboard the "Silver Palm"?

A. If I may change your question—

Q. Surely.

A. The displacement of the ship of 22 feet forward and 25 feet 2 inches aft, a mean of 23 feet

(Testimony of David W. Dickie.)

7 inches, would be 13,215 tons, and the displacement of the ship at the time I made the test would be 11,105 tons.

Q. It would make a difference in the momentum of the ship, would it not, at 108 revolutions?

A. Yes.

Q. If I remember correctly, speed times weight equals momentum, does it not, or what is the formula on that?

A. No, I think it is mass times speed is the formula, but I have the thing calculated out if you want it.

Q. What I was going to say was, if the "Silver Palm's" engine revolutions were 108 and the displacement was approximately 11,000 tons, she would not have the same velocity or momentum that she [662] would when her displacement is 13,000 and some odd tons at engine revolutions of 108?

A. Not quite, there would be a little more slip.

Q. Mr. Dickie, when you said the engines were making 108 turns at the time you began these tests, can you tell me how long they had been making 108 turns?

A. The shortest time that we allowed between tests was approximately one-half hour; that is to say there was approximately one-half hour between tests to bring the vessel up to speed for the next test. Does that answer your question?

Q. What I am getting at is this, after completing one test I presume you slowed and turned

(Testimony of David W. Dickie.)

around and got yourself ready to make the next test, did you not?

A. No. We completed a test, after which the ship came to rest, and then we put the ship full speed ahead in order to bring her up to full speed again for the next test, and that time between putting her full speed ahead and until we began the next test was approximately one-half an hour.

Q. In making your test, what allowance, if any, did you make for current?

A. The first test had to have a small allowance for current, but I could not tell how much. The other two tests required no allowance for current, because our boxes that we dropped overboard were distributed along like fence posts on the surface of the ocean and drifted with the current at the same rate that the ship was drifting.

Q. Why was it in the first test you made an allowance for the current?

A. In the first test I did not make any allowance for current but there should be a little allowance made. The first test was taken from a positive bearing, which is the Lightship, which has a flow of current past it, and therefore whatever current was flowing past the Lightship at the time, that correction should be made in the first test. The other two tests, there need be no correction made for current. [663]

Q. What I am getting at, Mr. Dickie, is this, was the current, for instance, in your first test with or against the ship?

(Testimony of David W. Dickie.)

A. In the first test, well, as a matter of fact, I don't know, because I had no means of measuring it. The nearest information that I could get to work from was in between Point Bonita and Mile Rock, and the one on the outside was at the Farallone Islands, and the current at the Farallone Islands is what is known as a circular current, it flows backward and forward like the hands of a clock; but the current inside at Point Bonita flows with the regular current table. We were out there at the Lightship, which is between the Farallones and this other current, so I could not express an opinion on that.

Q. You don't know how much the current was, nor to what extent it would affect the velocity of the ship?

A. No.

Q. Mr. Dickie, did I understand you to say that you were able to count the revolutions of the "Silver Palm" astern?

A. No, I was able to count the revolutions of the engine when the "Silver Palm" was going ahead, and when we reversed the engines there was no noise from the engines of the "Silver Palm," because the power was shut off, that is the explanation of it, you could not hear anything on the bridge, but when the engines started in reverse it made that noise that I described before, like a polite sneeze, just enough to indicate that we knew it had started.

Q. Your first test was when the ship was going ahead at 108 revolutions and you stopped the engines?

(Testimony of David W. Dickie.)

A. No, we placed the telegraph from full speed ahead to full speed astern. Now, what happened in the engine-room is a matter for somebody else, I was not there.

Q. You don't know what happened in the engine-room?

A. No.

Q. By the way, was there an engine-room indicator on the bridge showing the engine revolutions?

A. No.

Q. How long did it take, in your observation, from the moment the [664] engine-room telegraph was thrown astern until the engines were stopped?

A. The average time of all the tests was 2 minutes and 50 seconds.

Q. You said the average time. What was the greatest time?

A. No. 1 test was 3 minutes and 2 seconds, No. 2 test was 3 minutes and 6 seconds, and No. 3 test was 2 minutes and 21 seconds.

Q. How could you tell when the engines were in fact stopped?

A. That statement really should be corrected. What I mean is those are the times when the engine gave her first sneeze, indicating that she had started in reverse, not when she stopped.

Q. Mr. Dickie, you have given there three figures there, two figures showing a time for stop exceeding 3 minutes and one figure where it was 2 minutes and 21 seconds.

A. Yes.

(Testimony of David W. Dickie.)

Q. Isn't that a rather large discrepancy for a test like that?

A. No, the reason for that is, the long one is the one in which we had the breeze astern, and the short one is when we had the breeze ahead.

Q. I see, that is, you were accounting for a breeze there?

A. Yes.

Q. Helping to take the momentum off your ship, is that right?

A. Yes.

Q. Do you know what repairs were made to the engines of the "Silver Palm" while she was here in court following the collision?

A. I do not know about that.

Q. You don't know whether any changes were made in the engine?

A. I don't know anything about that. There were none that I know of.

Q. Do you know whether any changes were made in the engine equipment, cylinders, or anything of that sort?

A. No.

Q. You don't know?

A. No.

Q. Do you know what persons were on duty in the engine-room when these tests were made?

A. I went down in the engine-room before [665] the tests were made and looked the engines over, and the chief engineer I know was on duty. Now,

(Testimony of David W. Dickie.)

who the others were in relation to their positions on the ship I don't know.

Q. Mr. Dickie, I think you said on your direct examination this morning—you were asked the question, I think, Would it have been possible to shear off the "Silver Palm's" bow even if the "Chicago" were going ahead at a speed of 18 knots; will you give me your answer to that question again?

A. My answer would be no, because the material of which ships are built has to be more or less ductile, and the material would crush up and fold up into a mass of crushed material, and the bow would not shear off, cut right off.

Q. Do you mean that the actual metal plates, themselves, would crumple up without tearing and breaking apart?

A. The near side might tear, but it would pile up just the same as it is piled up in the after end of the cut on the "Chicago."

Q. In discussing the model tests that were made this morning I believe you said something to this effect, that with the cleats on the keel of the "Silver Palm" there would be a difference because there would be a greater wetted surface and that would have affected the displacement.

A. What I said was the presence of the keel 3 feet deep on the bottom of the "Silver Palm" would have increased her wetted surface.

Q. And I think you added to that, "Would have changed her displacement"—you made some reference to her displacement.

(Testimony of David W. Dickie.)

A. The keel of the model, if it is 3 feet deep is also 3 feet thick. There are 9 cubic feet in that keel for each foot of its length, which would have increased her displacement.

Q. If the two models were weighted in the proportion of 13 to 12 doesn't the weighting of the models take care of little incidental changes in displacement, such as that?

A. The model that should [666] have been used for the "Silver Palm"—

Q. Now, just a moment. I think you can answer my question "Yes" or "No," Mr. Dickie. May the question be read to the witness?

The COURT: Read the question.

(Question repeated by the reporter.)

A. I don't understand what you mean by 13 to 12.

Miss PHILLIPS: Q. Well, assume when the tests were started that one model was weighted to weigh 12 and the other 13, that is, there was a difference in that proportion between the two models. If the proportion of weights of the two models are fundamentally correct, doesn't that take care of little incidental changes of displacement such as a false keel?

A. Yes, if the models were correctly adjusted as to their displacements, the only correction that would be necessary for the false keel would be that attributable to wetted surface.

Q. You said this morning, I think your exact language was, the change in wetted surface would

(Testimony of David W. Dickie.)

add to the displacement error. I think I am quoting your exact language on that. Is that what you mean?

A. No, that is not my exact language.

Q. All right, correct me, please.

A. The change in wetted surface would add to the frictional resistance of the ship and would have nothing to do with the displacement.

Q. Well, if you are allowing for a specified speed at the moment of impact, doesn't the allowance for speed take care of frictional resistance?

A. No.

Q. Why not?

A. Wait a minute. The speed is proportional to the square root of the linear dimensions of the model. The displacement is proportional to the cube of the linear dimensions. The resistance is proportionate to the cube of the linear dimensions. The horsepower is proportionate to 3.5 power of the linear dimensions. The wetted surface is proportional to the square of the [667] linear dimensions. Therefore, the power that you are discussing is divided into two, as a matter of fact it is divided into three separate entities. The first is the power necessary to overcome the frictional resistance of the hull, and No. 2 is the power necessary to overcome the wave-making resistance of the hull, and No. 3 is the power necessary to overcome the residual resistance or eddy-making resistance of the hull. The difference between the models and the ships, themselves, as determined by the tests, only applies to

(Testimony of David W. Dickie.)

one of these. The other two had to be calculated according to the surface of the model.

Q. Now, Mr. Dickie, what I am getting at is this, when you allow a certain speed for one vessel or one model to hit another, don't you, in making that speed allowance, take into consideration the friction which the vessel might have through the water?

A. No.

Q. Suppose, for example, a ship had a clean bottom or did not have a clean bottom, when you allowed a speed of a certain amount didn't that speed take care of whether or not the ship has a clean bottom?

A. No.

Q. Why not?

A. The frictional resistance has to be calculated for the particular surface that you are dealing with. We have a separate coefficient of friction for each particular type of surface. We have clean paint in one case, and we will have a certain coefficient of friction; if there are barnacles on the surface of the plating of the ship there will be another coefficient of friction, and all of these separate coefficients of friction have to be applied to the ship and applied to the model, as they are different.

Q. Mr. Dickie, aren't you talking about the power which you have to have on board a ship in the various coefficients combined to acquire a given speed? Isn't that what you are talking about when you are talking about all of these coefficients?

(Testimony of David W. Dickie.)

A. No. The [668] power is in proportion to 3.5—that is the horsepower, that is in the proportion of 3.5 power of the linear dimension. For example, when he used the string to tow the model the towing by the string went in the relationship of the cube of the linear dimension, and if you had put a propeller behind the model and had pulled the propeller along with the model with a regular proper towing machine he would have used 3.5 power of the linear dimension.

Q. I want to confine your answer, now, Mr. Dickie, to the question I am putting to you. When you speak of the barnacles affecting the bottom of the ship, don't you mean that if the ship had barnacles on the bottom of the ship then she must make greater engine revolutions in order to obtain a given speed than if she did not have barnacles?

A. Yes, that is correct.

Q. Then if you say that a ship at a certain speed had a given momentum then you take care of the question of whether or not she did or did not have barnacles, and whether she did or did not have to have particular engine revolutions at that time?

A. Yes, that is all taken care of, but that will relate itself properly to the models.

Q. We will go on to another point: Have you ever performed any ship model tests since you were in England and Scotland back there in 1903, 1904, or 1905, or whenever it was?

A. No.

Q. Do you approve of ship model tests?

A. Yes.

(Testimony of David W. Dickie.)

Q. Why have you not performed ship model tests?

A. I never had occasion to design a ship in which the owner could afford to have the ship model tests performed. They are quite expensive.

Q. I am going back for another moment or two to the question of the "Silver Palm's" bow, that it would be crushed but could not be sheared off: Doesn't the extent of break on any metal depend on the tension that it is put to?

A. Yes.

Q. Why did you say that the "Silver Palm's" bow could not be [669] sheared off?

A. Because there is too much internal structure on the inside to tear away: that is a mass of plates and angles in there.

Q. How are you using the term "sheared off"?

A. I am using the term "sheared off" in the technical sense, that you take a piece of plating, assume that this piece of paper were a continuous piece of plating, if this piece were cut off at right angles to its surface it would be sheared off.

Q. When you speak of bow being sheared off, you mean actually cut off?

A. Yes.

Q. Take it away from the ship?

A. Yes.

Q. Breakage, which would mean that the bow was broken through on both sides with perhaps some resisting material so that it would string along the side, you would not consider that shearef off?

(Testimony of David W. Dickie.)

A. No. As I use the word sheared off, I mean that the bow would be cut right off.

Q. And floating around the ship?

A. As if you took a knife and cut it through.

The COURT: Q. And detached it?

A. And detached it, yes.

The COURT: We will take a recess for a few minutes.

(After recess:)

Miss PHILLIPS: Q. Coming back to the question of these little cleats on the bottom of the "Chicago" model, if the "Chicago" model was given the correct relative speed in the tests made, wouldn't the eddies caused by these little lugs along the bottom be inconsiderable in comparison with the speed ratio?

A. The eddies caused by these little pieces on the model would be perceptible in the eddy-making resistance of the model, but when they were related to the large ship, which would be in the proportion of 3.5 power of the linear dimensions, it would become quite appreciable in the eddy-making resistance of the "Chicago." [670]

Q. Let me see if I understand you. You said that the "Chicago" had cleats in the same proportion as these little cleats on this model that would make a substantial difference on the "Chicago"?

A. In the power required to drive the "Chicago" at that speed.

Q. However, there again if you have allowed a correct speed to the model then you have taken care of that?

(Testimony of David W. Dickie.)

A. If you have allowed correct speed for the model then you have taken care of it.

Q. Referring now to the eddies, if you say that the energy aroused by the rudder is inconsiderable to the force of the blow, wouldn't you also say that these little eddies caused by such cleats as that were insignificant?

A. I did not say that, though. You have got two things mixed up.

Q. I don't think I have, but go ahead.

A. Or I have got them mixed up, then. The retarding force to the speed of the ship by putting the rudder hard over is quite considerable, and will reduce the speed of the ship in time as much as two knots. That is one thing. The swinging portion of the ship, the swinging portion of the bow of the ship, going at one-third of a knot, is an inconsiderable amount as compared with the speed of the "Chicago" going ahead 5 knots.

Q. But what I am asking you is, if you have the speed relatively correct, then you take care of whatever effect might be caused by the rudder?

A. If you have the speed of the "Chicago" with the rudder hard over, and the speed of the model with the rudder hard over relatively correct then you have taken care of it.

Q. If you have the speed of the model relatively correct then you take care of the little eddies caused by these little cleats?

A. Yes, you have taken care of that, but you have added more power to the model than you add

(Testimony of David W. Dickie.)

to the ship. The power will not be in the proper relationship.

Q. But there, again, that depends on whether or not you have [671] the correct speed ratio?

A. If you have the correct speed ratio the power line will not be correct.

Q. Mr. Dickie, I think we could argue the rest of the day about this, you apparently do not get what I am driving at. For instance, if you should hold this model at a given angle, it does not make any difference, at a given speed it does not make any difference how long beforehand you have been maintaining that speed if you have got a certain speed at the point of impact, does it?

A. You are assuming now that you have the correct speed at the point of impact?

Q. Yes.

A. If you have the correct speed at the point of impact then what is your variable?

Q. I am asking you the question. Just repeat my question back again.

The COURT: Read the question.

(Question read by the reporter.)

A. It does not make any difference in what?

Miss PHILLIPS: Q. (Continuing) In the results obtained by the tests, if I have a certain speed at a certain angle, it does not make any difference how I get that speed, does it, whether I put on a thousand engine revolutions or twenty engine revolutions, if I get that, does it?

(Testimony of David W. Dickie.)

A. If you have the speed correct at the moment of impact I cannot see that it would make any difference how you obtain that speed.

Q. Of course, that is common sense. Now, in the same way, if you have the speed of the ship that is struck relatively correct, it does not make any difference whether or not that speed was slowed down by cleats on the bottom of the model, does it?

A. No, if you have the speed relatively correct at the moment of impact.

Q. If you have the speed relatively correct you have taken care of all of those other things like that, what kind of fuel oil you have, or what kind of engine-room men you have?

A. If you have [672] the speed correct and neglect all the other factors, then the speed is correct.

Q. Will you tell me what is the formula for the speed ratio between the speed of a prototype and the speed of a ship model in the performance of a ship model test?

A. May I have that question read?

The COURT: Read the question.

(The question was repeated by the reporter.)

Miss PHILLIPS: I would like to have you give me that without referring to the notes. That is a very simple fundamental question.

A. What do you mean by prototype?

Q. Prototype is the scientific term, Mr. Dickie, for the original object, whatever it is, that you are testing out with a little model. For instance in this

(Testimony of David W. Dickie.)

case the speed of the prototype would be the "Chicago" or the "Silver Palm." My question is what is the speed ratio or what is the formula for the speed ratio, whatever way you want to put it, the speed ratio between the speed of the prototype and the speed of a model in performing a ship model test.

A. The speeds are proportional to the square of the linear dimensions.

Q. Tell me how you would work it out. Just tell me the formula.

A. You divide the length of the ship by the length of the model and get the term  $L$ , which is the linear dimension ratio. Then the speed of the ship and the speed of the model would be in proportion to the square of the linear dimensions.

Q. Could you put it on the blackboard, or could you put it on a piece of paper? Take any speed ratio you want and tell me how you work it out.

A. If the ship is twice as large as the model the speed of the ship will be four times that of the model.

Q. I think you said this morning that the actual speed that the "Silver Palm" was going when the engines were stopped was 6.2 knots. Have I it correctly?

A. No, 6.02. [673]

Q. 6.02?

A. Yes.

Q. That is after your test of the "Silver Palm" on which you had your engine 108 revolutions ahead

(Testimony of David W. Dickie.)

you stopped the engines, and when the engines were in fact stopped in the water you said the ship was going 6.02 knots ahead?

A. When the first sneeze came showing that the engine had started astern, then the speed of the ship was 6.02 knots through the water.

Q. How do you know she was making that speed?

A. I had boxes thrown overboard and I ran 312 feet in a certain time, and then 312 feet more in another time, and I plotted the curve, showing the time and the distance run, and at the time that I heard the first sneeze from the exhaust showing that she had started astern, then I plotted a tangent of that curve.

Q. Did you make these measurements, yourself, of the boxes?

A. Yes.

Q. The engine revolutions were at zero when the ship was, in fact, going 6.02 knots ahead?

A. When the ship was making 6.02 knots the engine revolutions were at zero.

Q. There was a lag between the actual speed and the engine revolutions. Now, I think I am correct in this, but I am not sure, but correct me if I am mistaken, I think your calculation upon this test that you made from the time the "Silver Palm" was going 108 revolutions ahead until she was dead in the water she had traveled 3158 feet. Have I the figures right?

A. Yes, the average distance run was 3158 feet.

(Testimony of David W. Dickie.)

Q. That is, with the "Silver Palm" weighing 11,000 tons?

A. 11,105 tons.

Q. Did you say you had made a calculation as to what would have happened if she had a weight of 13,000 tons instead of 11,000?

A. Yes, I have.

Q. Have you those calculations here?

A. I have the answers, I have not got the calculations. [674]

Q. Well, have you a formula? Let us see how you work it out.

A. I plotted the speed and horsepower curve for that ship at 11,105 tons displacement, and then I plotted another speed and horsepower curve for the ship at 13,215 tons displacement. I then calculated the basis as to deceleration for the horsepower at 11,105 and 13,215 tons; between the limits of the 13½ knots, the speed of the "Silver Palm" when the collision took place, I took the proportional increase of the distance run and the times between the two basic curves and used that to compare the actual time which I took from the ship to get the times that applied for the ship at the 13,215 tons displacement.

Q. What difference did you find?

A. It was approximately one-eighth more—the decimal in one case was 1.12, and the decimal in the other case was 1.128, and one-eighth is 1.12, so I used that amount.

(Testimony of David W. Dickie.)

Q. So then you figured that the "Silver Palm," instead of covering 3158 feet would at a weight of 13,000 tons have covered approximately 3500 feet?

A. 3572 feet.

Q. 3500 feet, or thereabouts?

A. Yes.

Q. What allowance did you make for the difference in momentum and the capacity of the ship to slow down from a weight of 13,000 instead of a weight of 11,000?

A. Can I have that question read?

The COURT: Read the question.

(Last question repeated by the reporter.)

A. I assume you are referring to the fact that there is a difference in speed of the ships on account of the two displacements?

Q. Yes.

A. In this particular case the difference in speed of the ships between the 11,000 and 13,000 is very small. We checked up the speed of the "Silver Palm" at 108 revolutions and she was making about  $13\frac{1}{2}$  knots. Therefore, she may have been making slightly less than  $13\frac{1}{2}$  knots when she weighed 13,000 tons. On the day of the collision I don't know that, but I do know that she was mak- [675] ing about  $13\frac{1}{2}$  knots with 108 revolutions.

Q. Mr. Dickie, what I am trying to get at is this, what is the formula by which you arrived at the momentum of the ship at 13,000 tons and 11,000 tons?

(Testimony of David W. Dickie.)

A. I did not calculate that.

Miss PHILLIPS: I think that is all.

#### Redirect Examination.

Mr. LILLICK: Q. Mr. Dickie, you were asked a number of questions by Miss Phillips relative to the projections upon the model of the "Chicago" that have been used in the tests and asked as to the result obtained by the gentlemen over in the swimming pool in Berkeley, and the major result in so far as we are concerned here is the diagram that has been introduced as Government's Exhibit No. 10 in connection with how the two vessels would have come to rest after the impact. The questions upon cross-examination were directed to the result assuming that the two models came into contact at relative speeds. I will ask you what would be the result of these projections which upon the model translated into some comparable projections upon the bottom of the "Chicago" would have meant three projections 6 feet in depth and 12 feet in length, relative to how the two models would have come to rest after impact. Would those projections have made any difference as to how they came to rest after the impact?

A. Yes, with projections like that on the original vessel, the "Chicago," she would not have come to rest in the same time as she would without the projections.

Q. And would, in your opinion, the results shown on Government's Exhibits 10 and 11 have

(Testimony of David W. Dickie.)

been results that we could depend upon relative to how those vessels would have come to rest after the collision?

A. With these projections upon the vessels then the vessels would not have come to rest the way they are shown on that Exhibit No. 10. [676]

Q. You were asked upon cross-examination whether the bow of the "Silver Palm" would have been bent to port if as she came into contact with the "Chicago" she was turning on a hard a-starboard helm. It is my recollection that your reply to that was that her bow would have been bent to port, but it would have been very slowly. Will you tell me what you meant by saying that it would have been very slowly?

A. The speed of the bow moving to port is very slow. I actually measured it and it was 3 feet in 5 seconds, about one-third of a knot an hour. So that any effect that the swing of the bow of the "Silver Palm" to starboard due to its helm being hard over would be negligible as compared with the speed of the "Chicago" going 5 or 6 knots an hour.

Q. Putting it specifically, Mr. Dickie, if at the moment of impact the "Silver Palm" was turning under a hard a-starboard helm could the result shown in the photostat that has been shown to you possibly have been obtained by that alone?

A. No.

Q. In the test which you made with the "Silver Palm" could you feel the ship vibrating when her engines went astern?

(Testimony of David W. Dickie.)

A. Yes, there was slight vibration.

Q. It has been called to my attention that I have been using the term "hard a-starboard helm" and "hard a-starboard rudder". What has been your understanding of my questions relative to what hard a-starboard helm and hard a-starboard rudder meant?

A. I assumed that you were referring to the new International Rules whereby hard a-starboard referred to a hard a-starboard rudder, in contradistinction to the old rule, where if you wished the same command you would say "Port the helm."

Mr. LILLICK: I might say all through this case that the witnesses on the "Chicago" and those on the "Silver Palm" have been using the term "hard a-starboard" for the direct order, or "hard right," which means under the new rules the rudder and [677] vessel both go to the right.

Miss PHILLIPS: I would like to say that the "Chicago's" witnesses used the term right or left rudder because it has been old in the Navy.

#### Recross Examination.

Miss PHILLIPS: Q. Mr. Dickie, do you mean to say that an obstruction or whatever you want to call it such as this, if proportionately large on the bottom of the "Chicago," that that would have materially affected the extent to which she swung?

A. No, what I said was this, that if an obstruction proportionately large according to that model

(Testimony of David W. Dickie.)

were put on the "Chicago" it would take longer to come to rest than if the obstruction were not there, or she would come to rest *sonner* than if the obstruction were not there.

Q. But would it be material, comparing that with the size of the enormous rudders that the "Chicago" has, would you say that a thing like that would be material?

A. I would say that it would be quite material.

The COURT: The point is this, taking the models as far as weights are concerned in proportion for this test, the only purpose of this test, as I understand it, was to ascertain whether when a force incident to the collision has been taken care of, the main force, that is, the force of impact has been taken care of, whether the relative position of the vessels assumed by the models, and you might refer that to the position of the main vessels, would it involve placing in somewhat the same direction or in opposite directions as you applied different forces of speed. Now, of course, it is true that the witnesses for the Government say that all of these other elements would have some effect, a difference in speed in going ahead or not going ahead, or whether there was a force put into motion which would take hold or be [678] effective in a certain number of seconds after the collision, but they contend that all of these elements you have been discussing with Miss Phillips, and which I am now discussing, while they would all have some effect on the relative posi-

(Testimony of David W. Dickie.)

tion of the ship, would not affect the ships as to which way, if a certain force is applied on the models, the models would be facing. Now, the only question is whether the difference would be of a small or negligible amount compared to main question as to what would happen with this speed and with this blow delivered at a certain angle, would the angle of impact be the same type on the models. Your belief is you could not test in any way even roughly this feature by the models: Is that what you mean?

A. Absolutely, you could not test it by the models and these ships take exactly the same position as the ships did in a regular orthodox collision.

Miss PHILLIPS: Your Honor did not mean to go into an orthodox collision, to go into an analysis of what other ships were doing?

The COURT: I wanted to get away from those elements that you were discussing. I said it was not claimed they would not have any effect, but it was contended that the main problem was not affected by these elements.

Miss PHILLIPS: Yes.

The COURT: I wanted to get Mr. Dickie's reply to the problem, these elements being represented as they were by the other witnesses, you feel that these elements are of such magnitude in connection with the collision, that is are of such value that you could not make a proper test with such elements not taken into consideration in models which are not the real form of the ships which are involved?

(Testimony of David W. Dickie.)

A. Yes, everything should be correct in every detail.

Q. It is not accurate enough to be taken into consideration in [679] tests of this type?

A. No.

Miss PHILLIPS: Q. You say that notwithstanding the fact that you have not performed any ship model tests in the last thirty years?

A. Yes.

Miss PHILLIPS: That is all.

Mr. LILLICK: That is all. May it please the Court, we have one matter yet to present to the Court involving the demand made upon us by the Government relative to the bell-books of the "Silver Palm" which were not in the home office in London. The affidavit that was presented to the Court and that is on file has been accepted by the Government as an explanation of the log books, both engine-room and deck, that we have turned over to the Government for inspection. Now, as to the bell-books which may be on the "Silver Palm." We cabled to Singapore and received a reply the day following—I thought I had that cable here but I have not it, but the substance of that cable was that they have bell-books on the "Silver Palm" and that they will be brought with the vessel when she comes, because if they attempted to mail them they would not be here before the vessel, itself, so that upon arrival of the vessel these bell-books and all of them will be turned over to the Government for inspection.

(Testimony of David W. Dickie.)

The COURT: When do you anticipate arrival of the vessel?

Mr. LILLICK: In the early part of May. Our plan is since this is practically the conclusion of our case on the navigational features to go on with the limitation proceedings at the convenience of the Court and counsel, either by deposition or otherwise. My own situation is that I am prepared to go on with a certain portion of our limitation proof which the Government is entitled to have before they put in their case; in other words, the burden is upon us and we propose to maintain that burden. So that subject to Miss Phillips' pleasure we will either go on by deposi- [680] tion or before the Court at the Court's convenience.

Miss PHILLIPS: I should say that the Government ought to put on its rebuttal on the navigational features first. Have you any more witnesses on that?

Mr. LILLICK: No. It may be necessary to put in surrebuttal. Mr. Sawyer has denied the Silver Line, Ltd. is a corporation. In view of the fact that the whole question involved in not only the navigational issues, but the limitation issues will be before your Honor for decision and unquestionably will all be submitted to the Court at the same time, I wish to have from Miss Phillips the right to put that proof in formally if Mr. Sawyer will not consent. I will be glad to have the Government's stipulation that the Silver Line, Ltd. is a British

(Testimony of David W. Dickie.)

corporation, duly incorporated under the laws of the Kingdom of Great Britain.

Miss PHILLIPS: Yes, I will so stipulate. I think, your Honor, we might as well proceed and finish our rebuttal on the navigational issues, and then we may go ahead with depositions on the limitation proceeding, and thereafter complete that evidence in court if need be. However, there is one man on the limitation proceedings that I would like to put on out of order because it is convenient to do so.

Mr. LILLICK: We have no objection, but as to the rest of that I think that can be completed by mutual arrangement between us.

The COURT: At this time you are going to complete the navigational features?

Miss PHILLIPS: Yes, I want to put on some more testimony.

Mr. LILLICK: One more thing, to complete our case, Miss Phillips was kind enough to send to me the figures on the plates on the side of the "Chicago," and I would like to read that into the record.

Miss PHILLIPS: I would suggest that that be given to the [681] reporter and let him copy it into the record.

Mr. LILLICK: I will be very glad to do that. May I hand this to the reporter and have it made a part of the record?

The COURT: So ordered.

(The document reads as follows:) [682]

(Testimony of David W. Dickie.)

CA29/L11-1 "COMMANDANT'S OFFICE

(27-241594) Navy Yard, Mare Island, California

EDA DB Jo

MAR. 15, '34

"United States Attorney

Northern District of California

San Francisco, California.

Subject: U. S. S. CHICAGO—Thickness of Plates  
at the point of impact.

Sir:

Acknowledging your despatch of 14 March as follows:

'Please notify us by wire the thickness of the plates on the Chicago at the point of impact.

(Signed) McPIKE, U. S. Attorney,

"The following despatch was sent to you:

"1114 for Mr. McPike U. S. Attorney, San Francisco quote replying your inquiry thickness plates point of impact on Chicago shell plates at fore-castle deck one quarter inch at main deck one half inch and seven sixteenths inch at second deck three eighths inch and seven sixteenths inch at first platform seven sixteenths inch between first and second platform one half inch and three eighths inch at second platform seven sixteenth inch between second platform and inner bottom three eighths inch at inner bottom seven sixteenths inch at first longitudinal one half inch period deck plating fore-castle stringer five sixteenths inch and one quarter inch around turret three eighths inch main deck

(Testimony of David W. Dickie.)

one half inch seven sixteenths and three eighths inch second deck three eighths and one quarter inch first platform one quarter inch second platform five sixteenths inch inner bottom three eighths and five sixteenths inches letter confirmation follows unquote 1308.”

“The thicknesses given above for the various locations are of plates that were damaged by the impact and were given in the despatch in the following order for shell plating: [683]

“Beginning at the forecastle deck or highest deck at point of contact and working down through the various decks, inner bottom and first longitudinal, this latter being the lowest point damaged. Where two thicknesses are given, two fore and aft plates in the same strake were involved, having different thicknesses as given.

“For the various deck platings where two thicknesses are given, the larger applies to the plate on the deck next to the shell plating and the smaller applies to the plating on the inboard side of the stringer or heavy plate.

“On the inner bottom the 5/16” thickness is where the inner bottom connects with the second platform and the 3/8” thickness forms the inner bottom over the first and second longitudinals.

“Very truly yours,

Y. S. WILLIAMS,

Rear Admiral, U. S. Navy  
Commandant.”

Mr. LILLICK: We rest on our navigational issues.

## FRANK BARROWS FREYER,

Called for the United States in Rebuttal; sworn.

Miss PHILLIPS: Q. Will you give us your full name, please?

A. Frank Barrows Freyer.

Q. What is your occupation?

A. Captain, United States Navy.

Q. How long have you been in the Navy?

A. Since 1898.

Q. How long have you been a captain?

A. Since 1927.

Q. Will you state briefly, please, your professional training?

A. I graduated from the Naval Academy in 1902, sailed on board various ships in various capacities. I have had command of the U. S. S. "Glacier" while in the rank of Lieut-Commander, command of the U. S. S. "Oregon" when I was Lieutenant Commander. [684]

The COURT: What sort of a ship was the "Glacier"?

A. The "Glacier" was a converted merchant ship carrying supplies; on the "Oregon" as Lieut-Commander; I had command of the U. S. S. "Procyon," another converted merchant ship, and commanded the U. S. S. "Trenton," a light cruiser.

Miss PHILLIPS: I do not see attached to the depositions of the "Silver Palm" the exhibits. Have you got them here?

Mr. LILLICK: I did not know they were not attached.

(Testimony of Frank Barrows Freyer.)

Miss PHILLIPS: Perhaps we can proceed with photostat copies.

A. I have three here.

Q. Captain Freyer, will you give me those? I am going to show you, Mr. Lillick, what purports to be a photostat copy of Silver Palm Exhibit 1-Cox, a photostat copy of Silver Palm Exhibit 2-Cox, and photostat copy of Exhibit 3-Cox.

Mr. LILLICK: Just looking at them, I recognize them as being photostats of the originals. I think we will have no trouble in locating those.

Miss PHILLIPS: Q. Captain Freyer, have you read Captain Cox's testimony in reference to the three exhibits which I have just shown you, these photostats?

A. Yes.

Q. Have you plotted those three exhibits on a mooring board according to scale?

A. I have plotted those three exhibits shown separately, Silver Palm Exhibits 1, 2, and 3 Cox.

Mr. LILLICK: No objection to the photostats being used.

Miss PHILLIPS: Let us take this plot in the first place, what scale have you used?

A. The scale is 100 yards is equal to 1 inch.

Q. Have you plotted the sizes of the two ships according to this scale?

A. I have.

Q. Now, let us take the point that you have marked Position 1 for the "Silver Palm"—the

(Testimony of Frank Barrows Freyer.)

“Silver Palm” appears in red, does it not? [685]

A. Yes.

Q. Position 1, and at the bottom of the page is the position of Chicago No. 1. What does the first position represent?

A. That represents the position of the two vessels when the master of the “Silver Palm” said that he had sighted the “Chicago” as a blur 16 degrees on the starboard bow distant 2500 yards.

Q. Let us take Position 2 of each ship, the “Silver Palm” and the “Chicago,” what does that represent?

A. No. 2 represents the position of the “Silver Palm” three-quarters of a minute after position No. 1 at an average speed of 13.03 knots, with the “Chicago” at position 2, 26½ degrees on the “Silver Palm’s” starboard bow at a distance of 1800 yards.

The COURT: Of course, I have not read the depositions, and if any of this is data which has been given I wish you would let me know, because I don’t know now what is assumed and what is not.

Miss PHILLIPS: He is taking the testimony of Captain Cox as he gave it.

The COURT: In other words, he is taking the data furnished by Captain Cox in his deposition about his own vessel and the “Chicago”?

Miss PHILLIPS: Yes.

The COURT: In other words, this is a diagram based entirely on the testimony of Captain Cox?

Miss PHILLIPS: Yes.

(Testimony of Frank Barrows Freyer.)

Q. Going to the matter of speed of the "Silver Palm" between Silver Palm Position 1 and the collision point, which is position 3, what is the average rate of speed you gave her from 1 to 3?

A.  $12\frac{1}{4}$  knots, based on the "Silver Palm's" speed at No. 1, being  $13\frac{1}{2}$  knots, and position 3, being 11 knots.

Q. What average did you give the "Silver Palm" between her first position and her Position 2?

A. That was given at 13.03 knots, [686] which was three-quarters of a minute, equal to 326 yards in distance.

Q. Didn't you take the average of  $12\frac{1}{4}$  knots there?

A. No, I took the distance between Position 1 and 2 on an average speed of 13.03 knots for three-quarters of a minute, and between Position 2 and 3 11.78 knots for one and a quarter minutes.

Q. Giving an average for the whole run of  $12\frac{1}{4}$  knots, is that right?

A. Yes.

Q. Now, Position 3 represents the collision point, does it?

A. Yes.

Q. What angle of collision or impact did you give the two vessels—"the Silver Palm" hit the "Chicago" at what angle?

A. I can give that in just a minute. 35 degrees.

Q. And that is taken from what exhibit?

A. That is taken from "Silver Palm" Exhibit No. 3, Cox.

(Testimony of Frank Barrows Freyer.)

Q. Now, then, according to this plot the "Silver Palm" came how many yards between position 1 and 2?

A. 326 yards.

Q. And between Positions 2 and 3 how much did she make?

A. 491 yards.

Q. Now, taking the "Chicago" in her position from 1 to 2, what did she make?

A. 325 yards, which during three-quarters of a minute in time gave an average speed of 13 knots.

Q. Taking the "Chicago's" position between 2 and 3, according to this plot, what did the "Chicago" have to make to get from position 2 to the collision point?

A. The distance between "Chicago's Position 2 and 3 is 932 yards, which during one and a quarter minutes gives an average speed of 22.37 knots.

Q. In order to have the "Chicago" from an average speed of between Positions 1 and 2 of 13 knots to attain an average speed between 2 and 3 of 22.3 knots, can you state what speed the "Chicago" would have had to arise to attain an average of 22 and a fraction knots?

A. I cannot give that exactly, but it would have been [687] a speed of—if she had begun at position 1 at a low speed and had arisen at Position 2 so as to average 13 knots, then to have made 22 knots between Positions 2 and 3, it would have had to have been a speed certainly in excess of 22 knots,

(Testimony of Frank Barrows Freyer.)

that is revolutions in excess of 22 knots to have attained that speed.

Q. Suppose she were going between 1 and 2 at an average speed of 13 knots, and then from the position of 2, to reach an average of 22 knots between Positions 2 and 3, she would have had to have attained what speed?

A. The revolutions to have attained that speed, to have attained the average speed, I have not tried to work out, at all, but I would judge it would be revolutions for 25 or 30 knots.

Q. In order to get an average of 22 over the minute and a quarter?

A. Yes.

Q. Rising from 13 to 22?

A. Yes.

Miss PHILLIPS: Your Honor, I would like to offer in evidence this plot showing the maneuvers of the two vessels according to the Captain of the "Silver Palm."

Mr. LILLICK: I have no objection to the offer as being an offer of an exhibit made by Captain Freyer, but I wish it understood that the objection only runs to its being a plot of what actually occurred. I am not making any objection to the offer as an offer with respect to a check by Captain Freyer of what Captain Cox's testimony is.

Miss PHILLIPS: That is all I want it for. I only want it to demonstrate by a chart drawn to scale the maneuvers according to what Captain Cox said.

(Testimony of Frank Barrows Freyer.)

Mr. LILLICK: No objection.

The COURT: It will be received as Government's Exhibit No. 19.

Miss PHILLIPS: Just a minute. Mr. Freyer has just drawn my attention to the fact that this is the second sketch that I gave [688] him. That is, in this sketch he reduced the distance to 2000 yards. You explain it, Captain Freyer.

The COURT: You mean on the one that is being offered as 19?

Miss PHILLIPS: The exhibit just offered as Exhibit No. 19. I would like to withdraw it for a moment and have him correct what he testified there as to the distance.

A. The distances as given were in error. They were taken, in place of a distance of 2500 and 1800 yards, they were reduced to 2000 between Position 1 and a proportionate reduction between Positions 2 and 3.

Miss PHILLIPS: I really intended that as a second plot. In the first plot I intended to have Captain Freyer take up what Captain Cox said, just exactly as he gave it, 2500 yards, and the angles as he gave them. Now, let us take the distances as he gave them.

A. Might I add that the one that is now before us was made for the distances as given by Captain Cox. The other exhibits, of which there are three, including the one we have just had, the distance of

(Testimony of Frank Barrows Freyer.)

2500 yards was not taken, but 2000, and then 1500, and then 1000, to show what the results were with those distances.

The COURT: Now, this one that you are offering now is the one having the distance as estimated by Captain Cox?

Miss PHILLIPS: Yes.

The COURT: With his angles?

Miss PHILLIPS: The angles as he gave them.

A. Angles and distances as given by Captain Cox.

Q. In this exhibit you are now looking at, there is what distance between Position 1 of the "Silver Palm" and 1 of the "Chicago"?

A. 2500 yards distance.

Q. And what was the bearing?

A. The "Chicago" bore 16 degrees on the "Silver Palm's" starboard bow. [689]

Q. And that is taken from Captain Cox's first exhibit, Exhibit No. 1?

A. Yes.

Q. Now, the second position of the "Chicago" is fixed how?

A. That is by taking Position No. 2 as previously explained for three-quarters of a minute, and with the "Chicago" bearing  $26\frac{1}{2}$  degrees on the starboard bow a distance of 1800 yards.

Q. Then for the "Chicago" to move from Position 1 to Position 2 how many yards would she have

(Testimony of Frank Barrows Freyer.)

to move forward in 45 seconds, according to Captain Cox's testimony?

A. The distance between "Chicago" 1 and 2 is 500 yards, which in three-quarters of a minute would give an average speed of 20 knots.

Q. And between "Chicago" position 2 and position 3, according to Captain Cox's testimony, the "Chicago" would have had to make how much?

A. 1300 yards, which in one and a quarter minutes would give an average speed of 31.2 knots.

The COURT: We will take an adjournment now until tomorrow morning at ten o'clock.

(An adjournment was here taken until tomorrow, Wednesday, March 28, 1934, at ten o'clock.) [690]

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Wednesday, March 28, 1934.

Mr. LILLICK: May it please the Court: Yesterday we were asked for certain exhibits that had been introduced during the taking of certain depositions. When the depositions were taken, as they were at our office, it was by consent agreed that the exhibits there offered might be kept at our office until the trial of the case. I am now producing those exhibits, and in order that the record may show that they are before the Court we file U. S. Exhibit 4 Stanley, U. S. Exhibit 2 Cox, U. S. Exhibit Pitt, U. S. Exhibit 2 Stanley, U. S. Exhibit 3 Stanley, U. S. Exhibit 1 Stanley, Libelant's Exhibit 1 Puteh,

Silver Palm Exhibit 1 Cox, Silver Palm Exhibit 2 Cox, Silver Palm Exhibit 3 Cox, U. S. Exhibit 1 Cox.

We also wish to have the record show that the cable about which I spoke the other day, a copy of which I did not have, was sent, and I ask that the record show that on March 20, 1934, from San Francisco, California—

Miss PHILLIPS: That is all right, Mr. Lillick's word on that is sufficient, both as to the cable sent and the one he received.

Mr. LILLICK: The cable that was sent is: "Government requires all original bell and maneuver books deck engine since vessel's commission. What have you aboard? Advise if books could reach San Francisco prior your arrival."

To which we received the following telegram from Singapore:

"Your telegram of 20th instant deck engine room maneuver books unable to find complete set, retaining existing ones until arrival in San Francisco."

And at the date of vessel's arrival in San Francisco if I can get them on that day, and if not on the following day, we will deliver to the United States District Attorney the books that are on the vessel. [691]

Miss PHILLIPS: Thank you very much. Might I state that during the testimony of Lieut.-Commander Colton counsel asked the total weight of the revolving machinery, the rotating machinery in connection with the propellers. Mr. Colton did not have

the data, and it turned out he did not have it on board the ship. I have got it from the Mare Island Navy Yard, where the ship was built, and give it to Mr. Lillick Monday: Is that not correct?

Mr. LILLICK: Yes.

Miss PHILLIPS: May I at this time offer in evidence the deposition of Maharick Bin Latip, the helmsman of the "Silver Palm." This is a short deposition of Latip, taken as a witness for the United States; it followed his first deposition some ten days.

At the conclusion of my case, your Honor, I ask permission to offer in evidence the letters of administration of Mrs. Chappelle, the widow of Lieut-Chappelle. I have not yet received those from the East, and I will now ask permission to offer her letters of administration in evidence at the hearing before the Commissioner.

Mr. LILLICK: We have no objection.

Miss PHILLIPS: I am also asking permission to offer ancillary letters of administration in support of the claim of Mrs. Chappelle and Mrs. MacFarlane at the hearing before the Commissioner.

Mr. LILLICK: No objection.

Miss PHILLIPS: Yesterday afternoon at the close of the session Captain Freyer was on the stand. I would ask leave at this time not to proceed with Captain Freyer, but to take the testimony of two witnesses who are here from a distance. Captain

Freyer can easily complete his testimony at the close of the other two.

Mr. LILLICK: No objection. Might I also have the engineroom sheets for July 20, 1933 and the deck log for that date?

Miss PHILLIPS: Yes. [692]

Mr. LILLICK: We offer in evidence the engineer's bell-book for No. 1 engine upon the "Chicago" dated July 20, 1933, as our next exhibit.

The COURT: It will be Respondent's Exhibit 20.

(The document was marked "Respondent's Exhibit 20.")

Mr. LILLICK: Following that the engineer's bell-book for engine-room No. 2 dated July 20, 1933.

The COURT: It will be received as Respondent's Exhibit 21.

(The document was marked "Respondent's Exhibit 21.")

Mr. LILLICK: The engineer's bell-book for engine No. 3 on July 20, 1933.

The COURT: It will be received as Respondent's Exhibit 22.

(The document was marked "Respondent's Exhibit 22.")

Mr. LILLICK: The engine-room bell-book for engine No. 4 on July 20, 1933 in the "Chicago."

The COURT: It will be received as Respondent's Exhibit 23.

(The document was marked "Respondent's Exhibit 23.")

Mr. LILLICK: Also the sheet from the deck log of the "Chicago" for Thursday, July 20, 1933.

Miss PHILLIPS: Your Honor, at this time I will renew the objection that I made when counsel was cross-examining Lieut.-Commander Colton with respect to that entry, the entry being one from the deck log upon which the witness on the stand had no knowledge or information. I think perhaps your Honor might reserve a ruling, let the exhibit be offered and reserve a ruling so we need not argue about the point now and save time.

The COURT: That is the deck log?

Miss PHILLIPS: That is the rough deck log of the "Chicago" for July 20. Mr. Lillick examined Lieut.-Commander Colton in connection with the engine bell-books of the same date as to that.

The COURT: It will be received as Respondent's Exhibit 24, [693] subject to that reservation.

(The document was marked "Respondent's Exhibit 24.")

WESLEY McLAREN HAGUE,

Called for the United States in Rebuttal; sworn.

Miss PHILLIPS: Q. Will you give your full name?

A. Wesley McLaren Hague.

Q. What is your occupation?

A. I am a naval constructor, United States Navy.

Q. What is your rank?

A. Lieutenant.

Q. Will you please state how long you have been in the Navy?

A. I have been in the Navy for eighteen years.

Q. Will you state your professional training?

A. I graduated from the Naval Academy, one year post-graduate at the Academy, and two years post-graduate work with the Massachusetts Institute of Technology.

Q. Will you state what experience you have had, if any, in the repair of ships?

A. I was four years at the Navy Yard at Puget Sound, four years in Balboa in charge of marine repairs, and a year, approximately, at the Navy Yard at Mare Island.

Q. What experience have you had in the construction of ships?

A. I have never been engaged in the new construction of any large ships. I have designed and built a couple of boats for the Panama Canal and a

(Testimony of Wesley McLaren Hague.)

couple of tugboats, and tenders, but I never actually built large ships.

Q. In your experience in the various Navy Yards that you have mentioned, will you state whether your experience has been limited to the repair of war-ships or whether it has also included merchant vessels?

A. The Panama Canal Yard at Balboa, of course, is not a Navy Yard. It is, to all intents and purposes, a commercial yard, [694] and perhaps 33½ per cent of it was on merchant vessels, probably 50 per cent was merchant vessels in the form of dredging machines, and the remainder was Navy craft in the vicinity.

Q. Did you have any actual experience in the repair of merchant vessels down at Balboa?

A. Yes.

Q. Referring to the cruiser "Chicago," will you state what you had to do, if anything, in repairing the "Chicago" after the collision with the "Silver Palm"?

A. I have been in charge of the actual repair of the "Chicago" since the "Chicago" arrived at the Navy Yard until she left last Saturday.

Q. Did your duties require you to go on board the "Chicago" and examine the damaged area?

A. Yes.

Q. Have you a plan showing the damaged area of the "Chicago"?

A. Yes.

(Testimony of Wesley McLaren Hague.)

Q. Will you get it out, please, and spread it out on the table for the Court so that he can follow you?

A. Yes.

Q. What is the scale upon which you have drawn that plan?

A. The scale is one-quarter of an inch to the foot. Might I remark that I have laid it this way because this is the port side of the vessel and this is the starboard side.

Q. That is, the bottom of that represents the port side of the "Chicago"?

A. This is really the top of the ship as far as the legend is concerned.

Q. If it is clear enough it will not need any explanation.

The COURT: As a matter of fact, this legend is apparently at the bottom?

A. Yes, the legend is at the bottom, and I have laid it here because it seemed more natural that the bow should be there. It does not make any difference.

Miss PHILLIPS: I want you to explain the various lines and colors which appear upon that chart.

A. This is a plan looking directly down on the ship. It shows the lines of the decks. This is the forecastle deck. [695]

(Testimony of Wesley McLaren Hague.)

Q. Don't say "this," use the colors, so that it will be in the record. When you say "this" it does not mean a thing in the record.

A. The outside heavy line—

Q. In what color?

A. In black, is the forecastle deck. It is marked so.

The COURT: Q. You have marked it so?

A. Yes. The next line toward the center, a black dotted line, represents the main deck, and is so described. The next line inboard with *with* double dots represents the second deck, and it is so marked. The next line inboard with triple dots represents the first platform deck, and it is so marked, and the next line inboard with quadruple dotted lines represents the second platform deck, and is so marked. The circle represents the barbette of turret No. 1 of the "Chicago," 60-pound special treatment steel.

The COURT: What did you say it was?

A. 60-pound, 1½ inch plate.

Q. What is the size? You say it was 60-pound 1½.

A. 60 pounds is the weight of one square foot of plate, 1½-inch plate.

Q. That is what I thought you meant but you did not say that.

A. I probably will speak in poundage a lot, because that is the Navy usage. The heavy dotted line indicates the armor between the first and second platform decks.

(Testimony of Wesley McLaren Hague.)

Miss PHILLIPS: Q. Is it so marked?

A. It is marked as 3 $\frac{3}{4}$ -inch special treatment steel, bulkhead between first and second platform deck. Across between the two bulkheads of side armor we have an athwartships bulkhead of 3 $\frac{3}{4}$ -inch special treatment steel, connecting the two. Over on top on the side of this box so formed is armor and that is 80 pounds in weight, that is 2 inches. That is not marked on this plan. I might put it in pencil.

Q. Here is a red pencil which you may use. Perhaps ink would be [696] better.

A. I will put it in pounds, the box is 80 pounds 2-inch thick, S. T. S. special treatment steel. Rising from this box we have an ammunition hoist, which is marked on the plan. That rises from the top of the box on the first platform deck on up to the forecastle deck of that ship. The thickness of that is 60 pounds 1 $\frac{1}{2}$  inches thick. Between the forecastle deck, which is the topmost deck of the "Chicago" and the main deck of the "Chicago" we have another armored handling room connecting this ammunition hoist with the turret. This is indicated on the plan by heavy lines marked 1 $\frac{1}{2}$ -inch S. T. S., between the main and forecastle deck. There are two more lines marked "Bulkhead No. 21" in dotted lines; across the face of a large armored box is one of the main transverse bulkheads of the ship, which is a dotted line; marked "Bulkhead 23 $\frac{1}{2}$ " is a second one of the main transverse bulkheads of the ship.

(Testimony of Wesley McLaren Hague.)

Bulkhead 23½ is not only a water-tight bulkhead, but below the second deck supports the weight of the bulkhead and the re-action when the turret fires, and has been built extra strong. That covers the salient features of the "Chicago's" structure. The other lines that I have caused to be drawn in here were drawn from our records at Mare Island, and show the lines of cleavage of the damage on the "Chicago." First in black we have the forecastle deck cleavage, which runs from about Frame 12 in a diagonal line, almost to the center line, bends around the upper handling room, this armored spot that I have spoken of follows the line very closely down to the turret barbette and finally comes out to the side at about Frame 26. The next deck is the main deck. This line of cleavage is shown in red. It starts in with the same general direction from about Frame 16 to Frame 20, bends around a corner of the upper handling room, bends on into about Frame 23 and then out to the side of the ship. The next deck down is the second deck. This is shown in blue. It comes in about the corner [697] of the ammunition hoist. You will remember that this upper handling room does not extend below the main deck. That explains why the line of cleavage comes in to the ammunition hoist of the second deck.

The COURT: Underneath it?

A. Yes. That extends almost to the center line at about Frame 22½ and then comes out sharply, almost at right angles to the center line of the ship.

(Testimony of Wesley McLaren Hague.)

Next we have the line of the first platform deck shown in yellow. This starts in with the same general direction of the deck above, but here we encounter the very heavy armor encompassing the lower handling room, the armor box that I have spoken of, and we find this line of cleavage comes to the corner of the ammunition box, following right along the bulkhead to about Frame 23, and then sharply out to the side. Similarly, for the second Platform deck, which is in green on this sketch, we come in approaching the armored spot and out to the side of the ship at about Frame 22½.

Q. Mr. Hague, looking at Government's Exhibit 2-D, can you pick out for his Honor the ammunition box that you have referred to on that sketch and marked it in ink with the letters A-B?

A. I will draw an indicating arrow at the bottom A-B on the ammunition hoist. Now, the ammunition hoist actually extends into this upper handling room, but, of course, cannot be seen on account of the upper handling room bulkhead. It cuts it off here as though it stopped at the main deck.

Q. Mr. Hague, have you examined Respondent's Exhibit No. 18, that is the sketch prepared by the witness Dickie, showing the lines of cleavage, let us say, upon the "Silver Palm"?

A. I have.

Q. Is your map or plan of that deck damage drawn to the same or a different scale as Exhibit 18?

A. Drawn to the same scale.

(Testimony of Wesley McLaren Hague.)

Q. Will you look at that rather straight line marked on Exhibit [698] 18—I believe it is marked with the letters D-Z.

A. Yes.

Q. Now, is there anything in the interior of the “Chicago” which fits or explains this straight line D-Z on Silver Line Exhibit 18?

A. I understand the line D-Z represents the condition between the second and third decks of the “Silver Palm” at that height, and might I show a sketch that I prepared last night of the various heights of the two ships?

Q. Yes.

A. I apologize, I did not have time to ink it in, but from the information that was given to me on the back of this sketch—

Q. Let us have the information in the record from which you prepared that sketch.

A. Second deck, red line, was approximately 40 feet above the keel. This refers to the “Silver Palm.” The damage shown in red line extends down just to No. 3 deck. Height between No. 2 and No. 3 deck 9 feet. Center of anchor is 5 feet from stem and five feet below forecastle deck. Top of forecastle deck from keel is 55½ feet. Center of anchor to keel line is 50½ feet. Might I add, draft forward of “Silver Palm” 23 feet, draft at damage “Chicago” 19 feet. These are approximate drafts, but are very close, as I understand the testimony

(Testimony of Wesley McLaren Hague.)

here, as brought out. On that basis I drew this sketch of a cross section of the "Chicago," and a provisional of the "Silver Palm" so that we might be able to picture the height of the various structural members involved. May I have the question read again of the District Attorney?

Q. Yes, my question was is there anything in the interior of the "Chicago" which would fit in or explain straight line D-Z on Silver Palm Exhibit 18?

A. This line D-Z is somewhere between the second and third decks of the "Silver Palm"; in other words it is approximately at the second deck level of the "Chicago." [699] Now, if we take this Exhibit of the "Silver Palm" and fit it into the cleavage line of the "Chicago" we find a very close fit between the two. Here we have the straight cleavage line of the "Chicago".

Q. Did you say cleavage line of the "Chicago"?

A. Cleavage line. This is the blue line that comes directly out here on the second deck. This bulge from Z to R is lying outside of the shell plating of the "Chicago." That undoubtedly was the position of the two vessels at one moment during the collision.

Q. Now, the line D-Z, that straight line of cleavage on the "Silver Palm," fits in with what line, if any, on the "Chicago"?

A. It fits in with the line of cleavage from the second deck on up to the main deck, and that in

(Testimony of Wesley McLaren Hague.)

turn runs parallel with bulkhead 23½, which I have pointed out before was one of the main transverse bulkheads of the ship. It runs fairly parallel to bulkhead 21, which I have pointed out was water tight and a strong bulkhead. What happened in that place was that the "Silver Palm" came in, carried away Bulkhead 21, due to the force of the impact, bashed it back against bulkhead 23½, and the pressure of all this wreckage piling up against the bow of the "Silver Palm," the "Silver Palm" coming in, pushed the "Silver Palm's" bow from starboard to port, and they lay in there until, due to the dynamic reaction, the "Silver Palm" moved out or the "Chicago" swung away, which ever way you want to look at it.

The COURT: Either or both?

A. Yes

Miss PHILLIPS: Q. Was this main bulkhead that you have referred to as Bulkhead 23½, that transverse bulkhead, damaged?

A. That bulkhead was only damaged between the second and main deck; it was bent; between the main deck, and the forecastle deck where it was no watertight bulkhead, and no longer strong, it was bashed completely back. I would like to point out that the "Chicago" is quite a sturdy ship from the main deck down. However, [700] between the main deck and the forecastle deck the plates are light, her frames are light, so that it is not at all surprising to find this big cut in the forecastle deck and this

(Testimony of Wesley McLaren Hague.)

big damage up above, but as we go on down every hard spot, and by "hard spot" I mean a stiff, strong spot on the "Silver Palm" that encountered a soft spot on the "Chicago" went away in, and every hard spot on the "Chicago" was encountering a relatively soft spot on the "Silver Palm" stopped this damage at that spot. That is very clearly shown here when it is considered that the fore-castle deck between the main and the fore-castle deck, we have everything soft until we hit the upper handling room, there, and the damage absolutely stopped. The armor was not damaged at all on the handling room, although due to leverage pressure the gun mount was somewhat damaged. As we go on down, the next hard spot on the "Silver Palm" is the main deck, which came in between the main deck and the fore-castle deck of the "Chicago." That came in until it hit this ammunition hoist and stopped. The next hard spot on the "Silver Palm" was the second deck, which was the top of the "Silver Palm's" fore-peak tank. That went in with nothing to stop it, until it got in this hole between the ammunition hoist and the turret mount, and caused the deeper penetration, and then another spot, immediately below the second deck, in the neighborhood of 7 or 8 feet, we find the second deck of the "Chicago", which is an extremely hard spot. Coming on down to the first platform deck of the "Chicago" into an armored spot, we find that the "Silver Palm" came up against it and no damage was done,

(Testimony of Wesley McLaren Hague.)

scratches on paint work, etc., but no structural damage.

Q. Was there any packing up of wreckage against this main transverse bulkhead that you have described as 23½?

A. It was packed in there in folds so tightly that I missed my estimate for cutting it adrift with torches. I estimated eight hours and it actually [701] took me twenty-four hours to cut it through.

Q. Could you compare this bulkhead with the strength of the "Chicago's" side plating?

A. The bulkhead 23½ is probably better able to withstand a blow than the side plates of the "Chicago." I should say that the bulkhead 21 was about equally capable of withstanding a blow. The side plating on the "Chicago" was heavier than the bulkhead plating, but the stiffeners on the bulkhead were closer-spaced than the framing of the side plating.

Q. What was the angle of impact as shown by the lines of cleavage on the "Chicago"?

A. The angle of impact must have been about 40 or 45 degrees.

Q. Are these lines of cleavage on the "Chicago" consistent with the "Chicago's" being at rest, or nearly at rest at the moment of impact?

A. Yes.

Q. Will you explain why?

A. My picture of the damage is as the "Silver Palm" came at an angle of impact of 45 degrees or

(Testimony of Wesley McLaren Hague.)

40 degrees, if the "Chicago" were at rest the angle between the axes of the two ships would be also 40 and 45 degrees. As they came in the bow of the "Silver Palm" hit the side of the "Chicago," and the "Chicago" would first heel and then start to turn away something like that. The "Silver Palm" coming on in, the "Chicago" turning away, that would finally get down to this position that I showed before with the line D-Z on the "Silver Palm" exhibit parallel with the bulkhead  $23\frac{1}{2}$ , and at an angle somewhat greater than 40 or 45 degrees angle of impact, an angle say of 70 degrees. As that continued I imagine the "Chicago" continued to starboard and the "Silver Palm" to port, until they lay alongside of each other approximately parallel.

Q. Mr. Hague, if the "Chicago" were moving ahead at 5 to 6 knots and if the "Silver Palm" were moving ahead at 7 to 8 knots, do you [702] know what angle between the axes of the two ships would be required to produce these lines of cleavage as shown in your diagram of the "Chicago"?

A. It would require that the angle between the axes of the two ships should be something like 70 degrees, because with the motion on the "Chicago," the relative motion of the two then would be approximately 40 degrees, the line of impact shown by the cleavage; then if the "Silver Palm" came in at 70 degrees and struck the "Chicago", the "Chicago"

(Testimony of Wesley McLaren Hague.)

heeling and turning to starboard away from the blow, then we would find this line D-Z run across say from the corner of the upper handling room to the side of the ship, with nothing to explain why the wreckage of the "Chicago" had been bashed at the main bulkhead 23½.

Q. Is there anything in the internal structure of the "Chicago" which, in your opinion, would turn the "Silver Palm's" bow to port if the "Chicago" were at rest?

A. Oh, yes, it could not help but be turned to port. The "Silver Palm" is coming into a hard spot on her starboard bow caused by bulkhead 21 and 23½ and with no pressure on the port bow it is turning away, due to the blow.

Miss PHILLIPS: I would like to offer in evidence this plan of the damage shown by Mr. Hague and ask that it be marked Government's Exhibit next in order.

The COURT: It will be received as U. S. Exhibit 20.

(The document was marked "U. S. Exhibit 20.")

Miss PHILLIPS: Q. Mr. Hague, have you prepared a sketch of the "Silver Palm" damage on the same material as that sketch of yours?

A. Yes.

Q. Where did you get that sketch that you prepared?

A. I made a tracing from the "Silver Palm" exhibit and transferred that tracing which was made

(Testimony of Wesley McLaren Hague.)

on such paper as we could find in the building to tracing cloth. [703]

Miss PHILLIPS: I am going to offer this tracing of the "Silver Palm."

A. It may be checked here now. I have never had an opportunity to check it.

Q. If there is no difference at all, it is more durable than the original Exhibit 18, and I was going to suggest to use it if you thought it would stand up under wear, but I would rather not. Just forget that. I also offer in evidence Mr. Hague's sketch of the two ships, cross section of the two ships, as Government's Exhibit next in order.

The COURT: It will be received as Government's Exhibit 21.

(The document was marked "U. S. Exhibit 21.")

#### Cross Examination.

Mr. LILLICK: Q. Mr. Hague, you gave us certain drafts of the two vessels, 19 feet, I think, was one. What was the other?

A. 23 feet for the "Silver Palm."

Q. Where did you get those drafts?

A. From Miss Phillips.

Q. Do you know anything about the draft of the "Chicago" at the time of the collision?

A. Only from Miss Phillips' information, which she said had been brought out in evidence.

Q. So that if those drafts are incorrect, the relative positions on the diagrams that you have indicated with reference to where the first and second

(Testimony of Wesley McLaren Hague.)

decks of the "Chicago" struck the first and second decks of the "Silver Palm" would not be correct, would they?

A. They would be incorrect by the amount that the drafts were incorrect only.

Q. Do you know whether the bow of the "Chicago" was overhanging?

A. Yes.

Q. How much?

A. The bow of the "Chicago" overhangs some 18 feet.

Q. How about the bow of the "Silver Palm"?

A. I don't know.

Q. Have you any knowledge of the character of the stem of the [704] "Silver Palm" with reference to whether it was directly vertical?

A. Perpendicular to the base line?

Q. Yes.

A. No, I have not. From such pictures which were incomplete as I have seen it would appear almost vertical.

Q. So that you would say that the stem of the "Silver Palm," when it came in contact with the side of the "Chicago" was in practically a perpendicular position?

A. Practically, yes.

Q. What would you say as to the overhang of the "Silver Palm"—you know nothing about that?

A. No.

(Testimony of Wesley McLaren Hague.)

Q. So that if she had a flaring bow coming up and over, tied in with the stem in front, you could not tie that in in any way with your drawing, could you?

A. I do not understand your question.

Q. If the bow of the "Silver Palm" be a bluff and overhanging bow and assuming it was not in the perpendicular position which you are assuming, the upper portion of the "Silver Palm" would have contacted the side of the "Chicago" first, would it not?

A. The upper part of the "Silver Palm's" bow was bound to contact the side of the "Chicago" first unless she were a whaleback.

Q. Because in part the "Chicago," herself, has a flare at that part above the bow?

A. The "Chicago" has a flare outside the plating.

Q. How much is the flare, would you say?

A. From what point?

Q. From the point of the forecastle deck.

A. You see, this section that I have shown is a perfect picture of the side of the "Chicago." Now, the side of the ship is a curved line, and you might find that the forecastle deck on the "Chicago" dropped at that point, you might say, for a width of 16 or 17 feet, where on the main deck immediately below it it would only maybe for 15 feet and lower deck 14 feet.

Miss PHILLIPS: I just want to direct attention to the fact that there is a model in court drawn

(Testimony of Wesley McLaren Hague.)

absolutely to scale [705] and if counsel wants to save a little time the model is here.

MR. LILLICK: I am conducting the cross-examination as I think it should be. Perhaps you can tell me how far out from the water line on the "Chicago" a plummet dropped from the outer edge of the forecastle deck would hit the water?

A. I should say—this is a guess pure and simple—about six or seven feet.

Q. So that at the water line, in your opinion, although you say it is a guess, the flare of the "Chicago" is six or seven feet?

A. Yes.

Q. Does that continue on under water?

A. No.

Q. So that at the water line you would say, drawing the water the "Chicago" did that day for the balance of the distance below the water that the side was flush?

A. It goes the other way with the water line, the beam below water is greater than the beam at the water line, but only slightly, a matter of six or seven inches.

Q. Since you know nothing about the bow of the "Silver Palm" I suppose you cannot give me any idea of how far the overhang on her bow would be?

A. No.

Q. Do you know, lying water as the "Silver Palm" and the "Chicago" would have been in still

(Testimony of Wesley McLaren Hague.)

water at the time of the collision, and before the impact, how far above the forecastle deck of the "Chicago" the forecastle deck of the "Silver Palm" would have been?

A. The forecastle deck of the "Silver Palm," itself?

Q. The top deck.

A. The forecastle deck, itself, would be two or three feet.

Q. The top portion.

A. From the pictures I have seen a bulwark above the deck. That is of course usual merchant ship construction.

Q. Let us take the top of the stem, which of course would be straight up to the top of the bulwarks.

A. I have no information as to the height of the bulwarks. My recollection of the sketch that I made on the yellow paper led me to believe that the top [706] of the bulwark plate on the "Silver Palm" would be about ten feet above the forecastle deck of the "Chicago".

Q. So that when the two vessels came in contact you would say that the topmost portion of the "Chicago" struck by the "Silver Palm" would have been at a point ten feet below the top of the stem of the "Silver Palm"?

A. At the moment of impact, yes, and then there was a bun mount she was striking.

Q. You mean after penetration?

A. After penetration, yes.

(Testimony of Wesley McLaren Hague.)

Q. How deep?

A. How deep a penetration?

Q. Yes, before it would go up against that.

A. If I could scale it off the plans I have I could give it to you very accurate.

Q. I want your best opinion now, unless you can do it very quickly. Can you do it quickly, Mr. Hague?

A. I wish you would look at these plans, these are confidential plans and cannot be offered in evidence.

Q. That is perfectly all right, we will take your statement with respect to it.

A. There would be a diagonal penetration of seven feet.

Q. Seven feet?

A. Yes.

Q. Before the stem of the "Silver Palm" would come in contact with it?

A. With the gun, the left-hand gun of Mount No. 1 on the "Chicago."

Q. And below the main deck these two vessels would, if I may roughly state this, from the point where they came in contact and penetrated gradually break into each other so that the stem of the "Silver Palm" would have kept going into the hull of the "Chicago" in that relative way that I am doing it, stem hitting and going in in that position until she brought up against this gun.

A. You have said main deck. Now, I think you mean fore-castle deck.

(Testimony of Wesley McLaren Hague.)

Q. I understood from you that the "Silver Palm's" stem at the top [707] was 7 feet above any resistance—

A (Interrupting) Forecastle deck.

Q. Any resistance upon the "Chicago."

A. Yes.

Q. And that when that stem brought up on this gun it was 7 feet inside the outside line of the "Chicago."

A. Yes.

Q. I ask you whether that is not true, that the penetration of the "Chicago" with the—I do not want to call it "gingerbread" material below—the light plating below the forecastle deck would have gone straight in in that fashion until it brought up against the gun?

A. That is the only place where there is anything that might be called gingerbread, but before it—no—it would continue on until it came up against the gun yes.

Q. So that the stem of the "Silver Palm" in penetrating the side of the "Chicago" would come into contact first with the gun: Is that right?

A. No. The stem is a long bar that extends from the keel line clean up to the top of the ship. The stem of the "Silver Palm" first came into contact with the forecastle deck head of the "Chicago."

Q. As I understand you, going in say 7 feet inside the outside line of the "Chicago" before it brought up against this gun?

(Testimony of Wesley McLaren Hague.)

A. Before the upper part of the stem brought up against the gun.

Q. What was the thickness of the plating on the "Chicago" where the stem of the "Silver Palm" first came in contact with it?

A. About 10 pounds, one-quarter of an inch.

Q. One-quarter-inch plating. May I ask you on your diagram Exhibit 20 to indicate on the forward line of the forecastle deck where you have your heavy line, the place where the plating was quarter-inch?

A. The plates of the "Chicago" throughout this damaged area between the main and forecastle deck are a quarter of an inch thick.

Q. Will you with your ruler put a quarter of an inch up here so [708] we can see on your diagram what the thickness of these plates was?

A. This is, of course, a full scale.

Q. Will you mark it "Thickness of Chicago plating"?

A. "Thickness of Chicago shell plating between forecastle and main deck."

Q. Now, so that we may understand it, you have so elongated your diagram that from a draftman's standpoint it is a very simple thing, no doubt, but the one-quarter inch is from the forward to the after end?

A. On the straight line set off by small straight lines.

(Testimony of Wesley McLaren Hague.)

Q. What was the distance between the fore-castle deck and the main deck down?

A. That varies. I can give you those things exactly.

Q. Let us have it.

A. From my sketch I can give it to you.

Miss PHILLIPS: It is marked on the sketch.

Mr. LILLICK: Let us take it at the first point of impact.

A. The distance between the fore-castle deck and the main deck is nine feet.

Q. So that for nine feet in depth the plating was one-quarter of an inch thick?

A. Yes.

Q. Below the main deck to the second deck what was the size of the plating?

A. You understand that plating does not extend from deck to deck. We never have the seams of the shell plating land at the deck, but in general the thickness of shell plating between the main and the second deck on the "Chicago" is 20 pounds or one-half inch.

Q. I want it at the point of first impact indicated opposite—is that frame 21?

A. That is frame No. 12.

Q. What was the thickness of the plating between the main deck and the second deck at that point?

A. The thickness of the plating between the main and the second deck at the point of contact between

(Testimony of Wesley McLaren Hague.)

the "Silver Palm" and the "Chicago" was 20 pounds or one-half inch. [709]

Q. What distance was it between the main deck and the second deck?

A. The distance between the main and second deck is 8 feet.

Q. So that for the first nine feet it was  $\frac{1}{4}$  inch and the next 8 half inch?

A. Yes.

Q. Will you just put there "Half inch"?

A. Yes.

Q. Between the second deck and the first platform deck what was the thickness of the plating?

A. Between the second deck and the first platform of the "Chicago" the thickness of that plating was  $17\frac{1}{2}$  pounds,  $\frac{7}{16}$  of an inch.

Q. Will you let me have that, please, on there?

A. Yes.

Q. Vertically, how far down did that extend?

A. That deck is 8 feet and 6 inches.

Q. 8 feet and 6 inches?

A. Yes.

Q. And the deepest portion of the cut upon the "Chicago" was down at the second platform deck, was it?

A. At the second deck.

Q. It is marked on your diagram, as I see it, "Second platform deck". I am perhaps in error.

A. This is the deepest portion of the cut, the blue line, second deck.

(Testimony of Wesley McLaren Hague.)

Q. I am speaking of it from the point of looking down.

A. This is the second platform deck.

Q. So that the damage looking down into the second platform deck—what is the thickness of the plate between the first platform deck and the second platform deck?

A. The damage did not end at the second platform deck.

Q. Then your diagram does not show that portion of the cut?

A. The diagram shows the upper line of the damage below the second deck, in other words the place of the damage at the second deck, but does not show the damage to the double bottom below the second deck.

Q. The damage shown on your diagram does not extend below the second platform deck?

A. No. [710]

Q. How far from the point of first impact on the side of the "Chicago" is it in a straight line to bulkhead 21?

A. I do not claim that the first point of impact came at Frame 12.

Q. Where did the first point of impact come?

A. In my opinion the first point of impact came at approximately Frame 17.

Q. Will you indicate that upon your diagram?

A. Yes.

(Testimony of Wesley McLaren Hague.)

Q. Digressing for a moment, Mr. Hague, I show you United States Exhibit No. 2, F, and I call your attention to the apparent scratching of the paint from the point near the port light to the edge of the plating. What caused that, would you say?

A. That was caused as the bow of the "Silver Palm" entered the "Chicago."

Q. What is the line to which I am pointing?

A. That is the heavy vertical armored bulkhead extending between the first and second platform decks and between Frame 21 and 23½, forming the port boundary of the lower handling room, for No. 1 gun mount, on the "Chicago."

Q. How far inside the shell plating on the "Chicago" is that? Is it flush with the plating?

A. No.

Q. How far is it inside?

A. On the level of the second platform deck it is 5 feet 3 inches. On the level of the first platform deck it is 5 feet 7 inches.

Q. So that the "Silver Palm" had to penetrate the side of the "Chicago" between 5 and 6 feet before it came in contact with that heavy armor plate: Is that right?

A. Yes.

Q. You have not answered the question I asked you, because you took exception to my mentioning the point opposite Frame 12 as the point of first impact. Let us not call it the point of first impact,

(Testimony of Wesley McLaren Hague.)

but the point at which the shell plating of the "Chicago" was sheared squarely in two, and tell me how far it is from that point to the armor plate marked by Bulkhead 21?

A. The distance between the point of damage at approximately frame 12 of the shell [711] plating at the level of the forecastle deck of the "Chicago" and the corner of the upper 8-inch handling room, and also at the forecastle level is 37 feet.

Q. You apparently took exception to my phraseology with respect to the shearing off of the plates at the forward end of the impact. Would you not call that a clean-cut point to the forward portion of the cut in the side of the "Chicago" on U. S. Exhibit 2-F?

A. Yes.

Q. Will you upon 2-F indicate to me the point which on your diagram is known as Plate 12?

A. That point is not shown on 2-F.

Q. It is even forward of the gash shown here on the exhibit?

A. Yes.

Q. The ammunition hoist was not in any way damaged, was it?

A. No, structurally it was not damaged.

Q. Indeed, there was hardly a scratch upon it, was there?

A. There were scratches on the paint work, in fact, it had to be repainted, but no heavy rubbing.

(Testimony of Wesley McLaren Hague.)

Q. I call your attention to U. S. Exhibit 2-I, and ask you whether the box-like upper structure to which I am pointing is not the ammunition hoist.

A. Yes.

Q. Where on this picture, if you can show it, is the point upon your diagram of bulkhead 21 with the corner which I am unable to designate?

A. The corner of the bulkhead 21 and the fore-and-aft armored bulkhead is obscured by the shell plating. It is approximately back of that point and back of this point.

Miss PHILLIPS: May we have that marked? "That point" and "this point" does not show up in the record.

A. I will call that point A and the second point B.

Mr. LILLICK: Q. Now, as I understand you, this corner which you have referred to as the corner of bulkhead 21——

A. (Interrupting) And the fore-and-aft armored bulkhead.

Q. The fore-and-aft armored bulkhead was not damaged, was it? [712]

A. No, it was not structurally damaged to the point where we deemed any corrective measures necessary.

Q. In other words, such portion of the prow of the "Silver Palm" as brought up against that had to be folded up or broken or moved out of the way?

A. It was probably pulverized.

Q. It was probably pulverized?

A. Yes.

(Testimony of Wesley McLaren Hague.)

Q. I call your attention to U. S. Exhibit No. 2-I, and your indication of where that bulkhead is, and ask you whether you can tell me what portion of the "Silver Palm's" stem, if any portion of it, entered the cut between those two points.

A. There is no known mark or point of departure to the "Silver Palm" that I can designate as being the part of the stem that entered the cut. It was a portion that was in the forepeak tank somewhere below the water line.

Q. How far below the deck of the "Chicago," the forecastle deck, is this corner about which we are talking, from the forecastle deck down?

A. To the top of the junction between bulkhead 21 and the fore-and-aft armored bulkhead, and from the forecastle deck of the "Chicago", is 26 feet.

Q. How far above the water line, if at all, is the top of that armored plate and bulkhead?

A. The top of that armor plate and bulkhead at the time of the collision was three feet above the water line of the "Chicago."

Q. So that impinging, if that be the proper word, the stem of the "Silver Palm" upon it, if it ever came in contact with that, you would say that contact would have been how far up on the stem of the "Silver Palm" from the water line of the "Silver Palm"?

A. It should show in the neighborhood of three or four feet.

Q. Above the water line?

A. Above the water line.

(Testimony of Wesley McLaren Hague.)

Q. I call your attention to Respondent's Exhibit No. 14, which is a photograph of the "Silver Palm" after she was placed in dry dock [713] at Moore's, and ask you to indicate upon that what, in your opinion is three feet above the water line of the "Silver Palm"?

A. I have no scale to go by.

Q. So you are unable to tell me?

A. No.

Q. I show you U. S. Exhibit 3-D, offered by the Government as a photograph of the "Silver Palm" as she was lying at Pier 46 in San Francisco immediately after she came in port, subsequent to the collision, and ask you whether upon that picture you can tell me where 3 feet above the water line of the "Silver Palm" would be.

A. No.

Q. You cannot tell me?

A. No.

Q. What do you know, Mr. Hague, of the draft of the "Silver Palm" at the time of the collision?

A. Only what I have been told, that it was approximately 23 feet forward.

Q. And with this Government's exhibit before you you are unable to tell me what you would say her draft is there?

A. One can never tell from a photograph; one never knows the angle that a photograph is taken from; if it had been taken from the top down then there is no means of telling.

(Testimony of Wesley McLaren Hague.)

Q. You say from top down. I hold it out straight horizontally from your eye and ask you to tell me if you do not agree with me that was taken almost exactly in line?

A. I have sworn to tell the truth, the whole truth, and nothing but the truth, and one cannot tell from a photograph. You have seen photographs of races which show the second horse winning.

Q. I am not trying to prove that you are not telling the truth. I am only asking you for the best information you can give me. I have not thought for a minute that you were doing anything but telling me what the situation was. That is all I want. There is no personal relation involved in it at all. I am doing the best I can, and I certainly am not accusing you of doing any- [714] thing but giving us exactly what you believe to be the truth. Now, isn't it possible to come to a conclusion generally, within say five feet, knowing what you do about the size of the "Silver Palm," as to where her water line is on this picture in comparison with where it would have been at the time of the collision?

Miss PHILLIPS: Just a moment. I object to that on the ground the witness has been asked and answered it very positively twice, and there is no showing that the draft of the "Silver Palm" at the time that photograph was taken was the same as at the time of the collision. We can infer that it was not the same because the "Silver Palm," having

(Testimony of Wesley McLaren Hague.)

tremendous damage in her forepeak tank, we can infer certainly that any reasonable man would do something in saving a ship to change the trim.

Mr. LILLICK: My question assumed that she was of different draft at the time of the collision and that is what I asked the witness, and the witness tells me again he cannot answer the question.

Miss PHILLIPS: The witness has positively stated he could not answer that question.

Mr. LILLICK: Mr. Hague, I call your attention to the heavy black lines between the main and fore-castle deck marked on your diagram, will you tell me how high that came up in the hull of the "Chicago"?

A. That extends between the main and fore-castle deck of the "Chicago", between the uppermost deck and the deck next below.

Q. In other words, that came straight up to the top deck?

A. Yes.

Q. Can you tell me whether that was damaged?

A. Yes.

Q. What damage was there?

A. The vertical members were not damaged. The fore-castle deck has a covering over the upper handling room of approximately 80 pounds, 2 inches, special treatment steel; that covering extends over the side of the box some- [715] thing like that so that there is an overhang all around and that corner was bent down.

(Testimony of Wesley McLaren Hague.)

Q. I show you U. S. Exhibit No. 2-M and ask you whether you can tell me where the ammunition hoist is in that photograph?

A. No.

Q. I hand you U. S. Exhibit 2-F and ask you if you can tell me where the ammunition hoist is?

A. Yes.

Q. Will you on that picture indicate where the top of this member about which you have been testifying appears?

A. That runs straight up to the main deck. I am putting an arrow and marking "Vertical armor bulkhead upper handling room between main and forecandle deck."

Q. How far down does that extend? Will you draw a vertical line on the photograph?

A. It extends from the forecandle deck where I put one arrow to the main deck, and I will put a second arrow with an "X" in the line.

Q. So that this particular member was at the very top of the contact between the "Silver Palm" and the "Chicago"?

A. Excluding the turret gun mount and gun, yes.

Q. What is the distance between the top and the bottom of that vertically on the "Chicago"?

A. The distance between the top and bottom of that member, that upper handling room on the "Chicago" is 9 feet.

Q. Now, one more question with respect to that; the bottom of that 9 feet height was how far above

(Testimony of Wesley McLaren Hague.)

the water line of the "Chicago" as she was at the time of the collision?

A. The bottom of that 9 foot height was 20 feet above the water line of the "Chicago" at the time of the collision.

Q. I call your attention to Respondent's Exhibit No. 16, which on the stem is indicated her draft. Your estimate of the draft, again, of the "Silver Palm" at the time of the collision was what?

A. 23 feet. [716]

Q. 23 feet?

A. Yes.

Q. Will you on that diagram indicate where 23 feet would be?

A. I will indicate that 23 feet as approximately as a person can when the stem is turned over diagonally, so that 21, 22, and 23 does not indicate 23 feet exactly. 23 feet is approximately at the point where I have marked "Draft providing the draft marks of the 'Silver Palm'" are correct. In merchant vessels the draft mark could be out as much as 12 inches.

Q. Have you any idea that the draft marks on the "Silver Palm" were incorrect?

A. No.

Q. Now, with that as a basis for your computation of the 20 feet above the water line will you put on the photograph where you deem 20 feet above the water line to be?

A. I will guarantee none of this result.

(Testimony of Wesley McLaren Hague.)

Q. I am asking for your best opinion.

A. 20 feet above the water line.

Q. That is a distance, you said, as I understand you, that the bottom of the member we were discussing on the "Chicago" was?

A. Photograph measurements are not at all accurate. That may possibly be 20 feet above the water line.

Q. That is as well as you can do with respect to an estimate upon your part of where that would be?

A. On this particular photograph.

Q. And if it be approximately correct then there was nothing below this member, in your opinion, in the "Chicago" other than the parts indicated by your diagram that came in contact with the stem?

A. I do not understand the question.

Q. My understanding is that you have testified that the upper handling room extended for nine feet.

A. (Interrupting) Below the forecastle deck.

Q. Below the forecastle deck, and below that there was no reinforce- [717] ing armor plate: Is that right?

A. Yes, but below that we run into a very stiff system of transverse bulkheads.

Q. The bulkheads which you mean are the bulkheads involved in the various decks shown on the photograph?

(Testimony of Wesley McLaren Hague.)

A. No, I am referring to the bulkheads, the water-tight bulkhead No. 21, which I have described as being approximately as strong as the shell plating, and water-tight bulkhead No. 23 $\frac{1}{2}$  being stronger than the shell plating.

Q. Then tell me, if you will, what, in your opinion, caused the break of the stem on the "Silver Palm" shown in Respondent's Exhibit No. 16 that appears just above your approximate distance of 20 feet and from then on down to the foot of the stem?

A. I believe that that is the mark of the handling room, the lower handling room of the "Chicago."

Q. Then there is another handling room besides that one shown on your diagram?

A. We have been talking of two handling rooms, the lower handling room connected to an upper handling room by the ammunition hoist.

Q. So that your diagram does not show the lower handling room?

A. It is not labeled as the lower handling room, but it does show a very heavy line of the bulkhead forming the lower handling room.

Miss PHILLIPS: May I ask the witness to mark the line of that lower handling room he has been pointing to, as that does not get in the record.

A. I will use a wavy line to indicate by an "X" the lower handling room. The top of this lower handling room was just about three feet above

(Testimony of Wesley McLaren Hague.)

the water line at the moment of impact. That is why I believe that the lower part of the stem which is folded in and has been cut and broken from the upper part stopped sharp at this armored bulkhead which forms the lower handling room and the upper part extended on over to give the damage which is shown [718] on the second deck under the main deck.

Mr. LILLICK: Q. And the stem of the "Silver Palm," striking as indicated there, folded over toward the starboard side of the "Silver Palm" instead of to port?

A. Yes.

Q. What is your explanation of the line from frame 12 running as it does apparently diagonally across the stem and then the stop at the after end?

A. I believe that the "Silver Palm" coming in from an angle of about 40 degrees struck approximately here, where I have made this arrow, and I believe that the port anchor of the "Silver Palm" ripped this tear from frame 12 forward, and piling up wreckage before it, it got more and more into what we call a hard spot down here, and it had about that form if it came in from an angle.

Q. You will admit with me until the "Silver Palm" brought up on this bulkhead there was nothing in front of her to stop her other than what I have termed "gingerbread," and I mean the plating and the other non-armored material of the "Chicago"?

(Testimony of Wesley McLaren Hague.)

A. Yes, above, but not below. Below the water line we run into extremely strong structure on the "Chicago."

Q. Weren't we looking down on this picture and your last plate 7/16 inch?

A. That is pretty heavy plating compared with usual merchant construction, 7/16 is pretty heavy.

Q. Do you know what the plating was on the "Silver Palm"?

A. No.

Q. Do you know anything about the structure of the bow on the "Silver Palm"?

A. Not accurately, no.

Q. In your opinion, Mr. Hague, a vessel such as the one we have here of the "Silver Palm" was, as shown by these photographs, a very heavy bow with numerous reinforcing frames and members?

A. The bow of the vessel is always constructed very strongly.

Q. Isn't it your opinion when the "Silver Palm" was going at a rate of speed of 10 knots an hour, whether the "Chicago" was [719] moving or dead in the water, she would have gone through this plating until she landed at that point?

A. No.

Q. You do not?

A. No.

Q. How far in do you think she would have gone at 10 knots an hour?

(Testimony of Wesley McLaren Hague.)

A. Coming in at about 40 degrees?

Q. 40 degrees.

A. I would expect her to penetrate in this spot on the "Chicago" shown on the picture exactly as far as she penetrated.

Q. That is how many feet?

A. That is in the neighborhood of—it all depends upon what level we are talking about. If we are talking of the level of the second deck where the "Chicago" is soft then the penetration is considerably more, than if we are talking about below the first platform deck where the "Chicago" was anything but soft.

Q. I am talking about the "Chicago" just as she was, and not any other way.

A. Then the answer to your question is various penetration.

Q. Now, you say that she would have gone in just as she did on this occasion at a 40 degree angle. If she had come in exactly athwartships, straight from the beam at the point opposite frame No. 17, where you say you think she first came in contact, how much would she have penetrated the "Chicago," in your opinion, if she had been going at a rate of 10 knots an hour?

A. Up above the second deck she would have gone well beyond the center line, and probably 17 or 18 feet.

Q. What do you mean by well beyond the center line?

(Testimony of Wesley McLaren Hague.)

A. The center line of the "Chicago" and undoubtedly would have gone beyond it above. Down below the first platform deck it would not have penetrated so far.

Q. Mr. Hague, you don't know, do you, whether the "Chicago" was moving, or not?

A. No. [720]

Q. Would you say that from the gash in the side of the "Chicago" that you could definitely assert that the "Chicago" was not moving when the "Silver Palm" struck her?

A. No.

Q. Isn't it a fact that if the "Silver Palm" did come into the "Chicago" at a rate of speed of 10 or 11 knots an hour at an angle of 40 degrees that from the standpoint of a Naval architect and your knowledge of the "Chicago" there would have been approximately the same result if the "Chicago" was going 6 knots an hour?

A. 6 knots and the "Silver Palm" at 10 or 11?

Q. Yes.

A. No, I would expect the armature to have suffered considerably under those circumstances. That is a mere guess and bound to be a mere guess.

Q. There is no possible way of telling?

A. There is no possible way of estimating or calculating accurately.

Q. You, as a naval architect, of course, can lay out a plan and give us the thickness and weight

(Testimony of Wesley McLaren Hague.)

of certain portions of the "Chicago," but from the standpoint of a practical navigator and knowledge of what went on at that time had you been there, and had you know you would not say that your opinion with respect to this is anything which could be relied upon?

A. I do not understand you.

Q. Let us put it this way: This is a diagram made by you to indicate exactly what the result of this collision was in so far as the "Chicago's" structure was concerned?

A. Yes.

Q. And as a naval architect you could tell us that?

A. Yes.

Q. You have never been in a collision at sea, have you?

A. Yes.

Q. Where?

A. In Chesapeake Bay once.

Q. Between what ships?

A. That was between the Motorship "America Land" and a small sailing vessel, it does not amount to much.

Q. Was the "America Land" a steel vessel?

A. Yes.

Q. And the other a wooden vessel?

A. Yes. [721]

Q. So you have had no opportunity of judging what two steel vessels would do?

(Testimony of Wesley McLaren Hague.)

A. I have had the opportunity, of course, to see steel vessels after they came in from a collision.

Q. Yes, we all have. But I will ask another question, this diagram *is*, as I said before, represents what your opinion is with respect to what happened at the time of the impact and is based purely upon what you theoretically have worked out as to what might have happened if the "Chicago" was at rest and the "Silver Palm" came at 10 knots an hour: Is that it?

A. Yes.

Mr. LILLICK: That is all.

#### Redirect Examination.

Miss PHILLIPS: I have another question I should have asked the witness on direct examination, and I will ask the privilege of asking it now, if I may.

Q. Mr. Hague, I am going to show you Government's Exhibit 2-F and I want you to show it to his Honor while I am asking this question. A witness testified yesterday, Mr. Dickie, for the Silver Line, that if the "Chicago" was standing still or almost still the accordion pleating on the after side of the cut in the "Chicago" could not have occurred but that the cut would have been clean on both sides. In your opinion is that testimony correct?

A. Absolutely no.

Q. Why not?

(Testimony of Wesley McLaren Hague.)

A. It could not be. In the lower part of this photograph we have a razor-like cut.

Q. On which side?

A. Both forward and aft. Above we have the accordion pleating. If that theory were sound then at the moment of actual contact and collision the upper deck of the "Chicago" must have been making considerable speed while the lower deck was still in the water, which, of course, is impossible and absurd.

Mr. LILLICK: Q. Would you agree with me that the lower por- [722] tion of this protograph, and I am pointing to the line from A to B, is a break of metal rather than a cut of metal? Isn't that just broken apart?

A. Metal always breaks in a collision, yes.

Q. But isn't that evidence of breaking apart?

A. Yes.

Miss PHILLIPS: I have one more question.

Q. You have said that the lines of cleavage shown in that drawing could have been caused if the "Chicago" had been at rest or going ahead. Will you explain the relation of the angle of impact to the angle of the axes of the two vessels so that we can have it better understood?

A. The matter of relative speed in damage of whatever nature is a function of relative speed masses, form of the objects in collisions and the structures of objects in collisions. Now, if I have got the "Silver Palm" off here on a course due east

(Testimony of Wesley McLaren Hague.)

and I had the "Chicago" here on a course due north, both traveling at 6 knots, as far as a man standing on the deck of the "Chicago" was concerned it would appear that the "Silver Palm" was side-slipping through the water at an angle of 45 degrees and the angle of impact would be 45 degrees, although the angle between the axes of the ships is 90 degrees.

Miss PHILLIPS: That is all.

Mr. LILLICK: That is all.

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The COURT: We will take a recess now until tomorrow morning at ten o'clock.

(An adjournment was here taken until tomorrow, Thursday, March 29, 1934, at ten o'clock a. m.)

Filed June 19, 1934. [723]

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Thursday, March 29, 1934.

BALDWIN M. WOODS,

Recalled for the United States in rebuttal.

Miss PHILLIPS: The witness has already been sworn, your Honor.

Q. Professor Woods, I am going to show you two photographs of the cut in the "Chicago's" side, Government's Exhibit 2-C and Government's Exhibit 2-E. Please put them on the table so that his Honor can see the pictures.

(Testimony of Baldwin M. Woods.)

Mr. LILLICK: May I see them?

Miss PHILLIPS: Yes. A witness testified day before yesterday for the Silver Line, Ltd. that if the "Chicago" had been standing still or almost still the corrugated pleating on the after side of the cut in these protographs could not have occurred, but that the cut would have been clean on both sides. In your opinion is that testimony correct?

A. No.

Q. Why not—and I am going to ask you to speak up, because in addition to the noise of the street we have the noise from a cleaning establishment.

A. It is necessary in analyzing the form of failure, I shall call it failure, when steel plates or other structures are ruptured, to take account of the strength of the structure and of its complexity. The folding on the right hand side could have been accomplished with the "Chicago" at rest in the following way. I think perhaps I had better make a diagram; I have a sketch here of my concept of what might happen in such a case. Let this represent the "Silver Palm," and let this represent the "Chicago" in very rough outline.

The COURT: So that the record will have it, let the line marked "S" represent the "Silver Palm."

A. The line "S" represents the "Silver Palm." [724]

(Testimony of Baldwin M. Woods.)

Q. That is the center line?

A. The main axis—the mark “C” refers to the axis of the “Chicago.” The two are shown at an angle of approximately 40 degrees between the axes. I assume that the “Silver Palm” might have any speed, and the “Chicago” might be at rest; I assume also by these little arrows four phases during failure. The first phase is one of contact.

The COURT: Marked “1”?

A. Marked “1”. At this phase the forward portion of this plating is thrown in greater tension than this portion, although with the deflection which takes place both sides will probably be in tension. There is also a tendency to slide, that is to say this portion might very well slide, tend to slide somewhat. It will be resisted, of course, by the inertia of the vessel and the pressure of the water on the wetted surface, which is a very great pressure. Failure will take place. During that failure it would be possible for the prow to be bent to starboard. After failure of this plate, which will be referred to as side plate of the vessel, suppose it would then strike a cross bulkhead, and I shall name that the first bulkhead—in that position we encounter the bulkhead. Now, I assume that in reaching position 2 there has been a certain deflection to the starboard of the bow, due to the resistance of the plates of the ship along—

Q. (Interrupting) Along the angle of impact?

A. Along the angle of impact. On encountering

(Testimony of Baldwin M. Woods.)

the first bulkhead, should it be of a certain strength, either greater or less than the outside plating, there will be a tendency if the deflection has not been so far as to turn it—if it has not been turned too far so as to fold it over, if the deflection is as shown——

Q. That would be a matter of degree of resistance?

A. That would be a matter of degree of resistance of the shell plating and of the strength of it. I am explaining the possibility of a cer- [725] tain statement. On striking this bulkhead, if it is of reasonable strength—strike out the word “reasonable”—if it exists the prow may be deflected to the port, and in sliding along it, it is clear that there will be a tendency in the force when it presses against there in the direction of the plate it will twist it. If this bulkhead should be carried away, the energy required to demolish will be reflected in the damage done to the prow, which may, under those conditions, and under those conditions would, turn it to port. Whether it will turn it beyond a straight position to it or beyond it I don't know, I think it would be impossible to tell without seeing the material, itself. On striking the second bulkhead, there being a considerable mass of debris accumulated by the demolition of the first bulkhead, there would still further be a turning to port. If the sum of the strength of the two bulkheads should prove materially greater than the strength of the side plating, the prow could be deflected considerably

(Testimony of Baldwin M. Woods.)

to port. That is a line of possible events, and such a treatment would cause, such a sequence would in the beginning tear the outer plating first on the forward side, because that side is in greater tension with this and the plates would be folded around and as compressed in here they could easily assume the convolutions that exist in the picture to me.

The COURT: What is that, a Government exhibit?

Miss PHILLIPS: That is Government's Exhibit 2-E. I showed Professor Woods two photographs and your Honor will recall my question was directed to the testimony that such convolutions could not have occurred if the "Chicago" were standing still, and Professor Woods is explaining his reasons why he did not think this testimony was correct.

A. I have a little example here. To continue, the question of what might happen in failure— [726]

Mr. LILLICK: I beg your pardon, what are you proposing to do with the candle and the wooden box?

A. With the candle and wooden box I wish to simulate what could happen with a substance that might be deflected and represent its deflection.

Mr. LILLICK: I object to such an analysis. I object to what apparently is a proposal to put a candle opposite a pasteboard box in what apparently is an attempt upon Professor Woods to show what might have happened with respect to the steel hull of one vessel being punctured by a steel

(Testimony of Baldwin M. Woods.)

bow of another vessel. I insist that the comparison is so absurd that it will neither help the Court to come to a conclusion with respect to the issues, but such a comparison is too remote and does not warrant its being done.

Miss PHILLIPS: I do not think the witness intended to show comparison between steel ships, but intended to illustrate what is meant by failures of material. If the Court does not feel that should be illustrated we will let it go.

The COURT: I think I can visualize what he says. What he is trying to show is the direction the force has penetrated.

A. Yes. As a matter of fact what I have in mind is shown on this sketch, your Honor.

Miss PHILLIPS: I would like to offer that sketch in evidence as Government's Exhibit next in order.

The COURT: It will be received as U. S. Exhibit 22.

(The sketch was marked "U. S. Exhibit 22.")

Miss PHILLIPS: Q. Professor Woods, can it be known in advance of an impact the direction in which the bow of the colliding vessel will bend, regardless of the condition encountered in the ship that is struck?

Mr. LILLICK: I object to the question upon the ground that it is immaterial, irrelevant, and incompetent; we are not con- [727] cerned with any issue involving what someone might think before

(Testimony of Baldwin M. Woods.)

the impact occurred. We have no testimony of any character with respect to that in this case.

Miss PHILLIPS: I beg your pardon. My questioning of the Witness Dickie very specifically was upon a very general question, and he stated a universal rule. I repeated the question to him that I was asking him a universal rule, whether or not it could be known that with a vessel moving or stationary, another vessel moving and striking it, whether we could know the invariable reaction of two metals. If you will refer to the transcript you will find it.

Mr. LILLICK: My objection to Miss Phillips' question as it is propounded is, could it be known in advance.

The COURT: The witness has not covered the same field. I think if the question that was propounded to Mr. Dickie was given the witness might be asked if that answer conforms to the truth in regard to the question.

Miss PHILLIPS: That is a very much better suggestion than mine. I will read this—

Mr. LILLICK: What page are you referring to?

Miss PHILLIPS: This is on page 565, and refers to Exhibit No. 18. I will place the pencil sketch before the witness. This was particularly referring to the blackboard sketch of which the pencil sketch is a copy. This is at the bottom of page 565:

(Testimony of Baldwin M. Woods.)

“Q. Now, Mr. Dickie, if a breakable structure comes at a hard structure, say at an angle of 35 degrees, or 45 degrees, or whatever degrees you want, do you say that invariably this structure is going to bend inward, if this structure is moving?

“A. If the horizontal line is moving it will tend to push the diagonal line over in the direction in which the horizontal line is moving. [728]

“Q. Mr. Dickie, assuming you have a straight line A-B, and we have a structure C-D striking at an angle, you say that the straight line A-B, if it is moving, the structure C-D is going to bend inward in the direction of the line A-B: Is that correct?

“A. Yes, that is correct.

“Q. Do you say that is going to be invariable?

A. Yes.

Q. And in this structure the bend is going to come like this and the bulge is going to come on the side next to the structure A-B: You say that is invariably correct?

A. Yes, that is correct.

“Q. Whereas if the structure A'-B' is stationary and the structure D-C hits it, you say that the structure D-C is going to bend?

“A. If the structure D-C is a ship it will penetrate into the structure A'-B', and will push the material in in the form of a V.

“Q. You have not answered my question. I am asking you as to the bending of this structure C-D,

(Testimony of Baldwin M. Woods.)

how that is going to bend. Is that going to bend inward or in the direction toward the structure?

A. If the structure A'-B' is at rest and the structure D-C strikes A'-B', the structure D-C will penetrate the structure A'-B'. The results more or less are a little bit confusing, because the structure of the "Silver Palm" at the bow is built up solid with heavy brackets and decks spaced about at the most six feet apart. It is very strong.

"Q. I am asking you a general question on stresses and strains, and I am asking you whether or not it could ever be said to be an invariable rule as to breaking inward in the first diagram A-B. Let us go over it again. Here is a structure A-B and it is in motion; we will assume the structure D-C hits it; you would say that the structure D-C is going to bend in that direction that A-B is moving ahead?

A. Yes, that is correct.

"Q. And that the bulge is going to occur on the side toward the structure A-B?

A. Yes. [729]

"Q. You say that is invariable?

A. Yes, that is invariable." Professor Woods, in your opinion is that testimony correct?

A. Referring specifically to the last question, it is not.

Q. Why not?

A. It would depend on the nature of the forces encountered during the failure.

The COURT: Q. During what?

A. During the failure.

(Testimony of Baldwin M. Woods.)

Q. What do you mean by "failure"?

A. By "failure" I mean the progress of penetration.

Miss PHILLIPS: Q. What conditions will affect it?

A. The interior condition of the ship struck or of the structure encountered, no matter what it is, and the characteristics of the structure it strikes. It was this particular point which I wished to simulate with the candle and paste board box, using the candle to represent—

Mr. LILLICK: I beg your pardon.

Miss PHILLIPS: Never mind that. It is going to depend on the conditions it strikes?

A. Yes.

Q. Could the "Silver Palm's" bow be turned to the port if the "Chicago" were going astern, the "Silver Palm" penetrating or striking the "Chicago" at an impact of 40 or 50 degrees?

A. Yes, if she is not going astern too fast.

Q. Can you illustrate that by a diagram, or can you explain it?

A. Yes. May I refer to the diagram I had a moment ago? When the structure represented by "S" strikes the structure represented by "C" at an angle between the axes of the two of about 40 degrees, the sequence of events represented by the arrow positions 1, 2, 3, and 4, it is entirely feasible as long as there is a component of motion in the

(Testimony of Baldwin M. Woods.)

direction of the axis of "C". Let me change that, as long as the resultant of the components of motion in the direction of axis "C" is toward the stern of "C". That is a mathematical statement that I shall elucidate now. [730] the velocity of any object having motion along a curve, and for simplicity let us assume the motion of "S" to be along a straight line, may be broken into two components at right angles, as one knows in elementary physics. Let the structure C be at rest. The velocity of S will have a component parallel to the axis of C, which, for convenience, I place out here and label V, meaning velocity  $V_1$ . It will also have a component at right angles to the axis of C, in other words athwartships, which I shall designate as  $V_2$ . If the structure C is moving astern with a velocity  $V_c$ , which is less than the  $V_1$ , there will be left a velocity in this direction to exert pressure.

Q. You say "in this direction."

A. In the direction  $V_c$ .

Q. In a direction aft?

A. In a direction aft, there will be left a velocity in the direction aft to produce the type of deflections shown by arrows 3 and 4; that is to say, so long as the component  $V_1$  in the direction of the axis of the "Chicago" is greater than the reversing component  $V_c$ , and parallel with it, there is a velocity left to cause pressure against the bulkheads indicated in the sketch.

(Testimony of Baldwin M. Woods.)

Q. Professor Woods, I show you Respondent's, Silver Palm's Exhibit No. 16. I wish you would examine that photograph. Do you see any evidence in that photograph of diverse structures encountered within the hold of the "Chicago"?

A. Yes, there is evidence of complex structures.

Q. Will you point them out?

A. There is evidence of some structure impinged against at this point.

Q. What point do you mean?

A. In this vertical hollow leading from about 20 feet above the water line down to—what does this 23 feet refer to from here to here?

Q. Those marks were put on by a previous witness; he has marked one point possibly 20 feet above water line and the other point [731] approximately 23 feet. I don't remember the transcript, but I think that 23 feet means above the keel. However, will you relate your suggestion about a hollow in relation to the two marks given on the picture opposite 20 feet and 23 feet?

A. The hollow reaches from above the mark possibly 20 feet above the water line to below the water line approximately 23 feet.

Q. Will you examine the fold in the hull of the "Silver Palm" below the mark approximately 23 feet? In your judgment which way does the stem of the "Silver Palm" appear to be folded?

Mr. LILLICK: I object to that on the ground that the witness is being asked a question which

(Testimony of Baldwin M. Woods.)

we, ourselves, can answer. We do not need the opinion of a witness from the standpoint of an expert on a matter that is self-evident.

Miss PHILLIPS: You mean it is self-evident that the "Silver Palm's" bow from the point marked in the photograph "Approximately 23 feet," the point below that, that it is self-evident that it is turned to starboard?

Mr. LILLICK: I will admit that it is self-evident that it was first turned to port and then later to starboard.

Miss PHILLIPS: I think you are now diagnosing the picture according to your opinion. I am going to ask the witness if he will diagnose it according to his opinion.

Mr. LILLICK: My objection he has not seen the vessel, itself, he is shown a photograph, he is not familiar with ship construction and his opinion is worthless, and I submit that the question is immaterial, irrelevant, and incompetent.

Miss PHILLIPS: I submit, your Honor, that the opinion of this witness is not worthless, and that the testimony of Mr. Dickie, covering the greatest part of this is theoretical knowledge of metals and bending of metals and the like, and this witness is certainly qualified to give an opinion on that. [732]

Mr. LILLICK: The witness is not shown to be anything but an expert upon mathematical computations with respect to bodies meeting each other.

Miss PHILLIPS: I do not propose to argue the

(Testimony of Baldwin M. Woods.)

question of the qualifications of the witness at this point. I am asking the Court if the witness is not qualified to express an opinion upon the force of the "Silver Palm's" bow and the force meeting that bow as indicated in that photograph. Will you read back the last paragraph in which I intended to convey what my question would be? (The record was here read by the reporter.)

Q. (Continuing) Professor Woods, I would like to have your opinion, if you can give it, upon the force meeting the bow of the "Silver Palm" at the point marked "23 feet downward" as indicated in that photograph.

Mr. LILLICK: I object to that question on the ground that it is indefinite, in that it calls for the opinion of the witness with respect to forces that, from the form of the question, would mean an answer that would be immaterial, irrelevant, and incompetent.

The COURT: Let me ask this question: You have previously expressed a theory regarding the force of impact on a moving object.

A. Yes.

Q. Do you think that your theory is borne out by the appearance as indicated by that picture, as to the effect of those forces?

A. I think that they are.

Q. Do you feel that you can tell that by looking at that photograph? Do you feel that you could depict that situation on that photograph relative to that question, or don't you?

(Testimony of Baldwin M. Woods.)

A. I think I can, to a certain degree. I would say this, that I believe that no one can tell——

Mr. LILLICK: Pardon me, I do not want——

[733]

Miss PHILLIPS: Just a minute——

Mr. LILLICK: He is answering a question from the court in a manner that denies me the right that I have to object to testimony, which had the witness answered the Court's question would have resulted in a "Yes" or "No," and at once the subject would have been closed, because this witness could only give what happens to these two vessels, because he knows nothing about vessel construction, he knows nothing about what would happen to these vessels in a collision of this character. He can look at the photograph, as he has looked at it, and his opinion is worth no more than any one of the witnesses in the court-room.

Miss PHILLIPS: I think counsel persistently overlooks the qualifications that the witness had, which were given on the first day. In answer to the Court's question the witness said yes, to a certain extent.

The COURT: He has said that he feels that he can point out such a formation there as might happen in an accident of this kind. That is correct?

A. Yes.

Miss PHILLIPS: Q. Will you point out what appears from the photograph No. 16, just indicate that?

(Testimony of Baldwin M. Woods.)

A. I use the word failure relative to the deformed or torn portion of the steel, which is a technical term often used when a structure is seriously damaged. The failure in a case of this sort will probably, and in nearly every case it is, preceded by stages, is impossible of complete analyzing from any single picture, because what happens in the later stages is compounded upon what has happened before. What happens in the failure is due to the summation of all of the events in the impact, the comparing of surfaces, the comparing of structures. It is clear from the photograph that a portion of the bow below the line approximately 23 feet had been folded to the starboard. It is also clear for some reason the portion of the bow just below the line marked "Approximately 23 [734] feet" was retarded and did not proceed in its demolition as far as the portion just above. The natural conclusion is that it encountered sufficient additional resistance, or let me change that, that it encountered sufficient resistance to fold this back whereas the portion above did not encounter adequate resistance; the portion above the same line did not encounter sufficient resistance to force it back, or else there was a difference in the strength of the portions above and below the line approximately 23 feet.

Q. Professor Woods, I have a question to ask you in regard to the ship model tests which you performed. I think you said that in your ship model tests the models you used were of certain dimensions. Do you recall now what they were?

(Testimony of Baldwin M. Woods.)

A. The model for the "Chicago" was approximately 49 inches long, and that for the "Silver Palm" approximately 40 inches.

Q. Is the ratio of 1 to 150 precisely according to the actual length of the two vessels?

Mr. LILLICK: I object to that as leading, your Honor, and suggestive.

The COURT: I think if the examination is going to continue much longer, we are running over the hour now, we will take a recess until two o'clock.

(A recess was here taken until two o'clock p. m.)

[735]

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Afternoon Session.

BALDWIN M. WOODS

Direct Examination (resumed)

Miss PHILLIPS: Your Honor, I have decided to withdraw the question that I asked just before the noon recess. I think it has been covered by the testimony given the other day. There is one more question I would like to ask Professor Woods about the model tests.

Q. Was the beam of the model in the same proportion to the length as the beam of the prototypes to their lengths?

A. No, it was not the same.

Q. Does this affect the result obtained in the model tests?

(Testimony of Baldwin M. Woods.)

A. For a test of impact of the type that was undertaken there is no effect.

Q. Why not?

A. Because the resistance to the forward motion of the ship is affected only slightly by a change in beam to draft ratio, and the major effect here was not one of resistance of the ship to longitudinal motion, that is to say, motion in the direction of the axis, but the motion of the ship against the water supporting all of the wetted surfaces.

Q. Professor Woods, what is analytical mechanics?

A. Analytical mechanics is a study of the laws of forces involved in bodies at rest and in motion.

Q. Have you ever made a study of analytical mechanics?

A. For many years; I teach them, too.

Q. Are there laws of analytical mechanics which govern the design of frame structures?

A. Yes.

Q. Will you state whether the laws of analytical mechanics are or are not generally applicable?

A. They are generally applicable to structures.

[736]

Q. Under the term "frame structures" are you or are you not including ships?

A. Yes, I do.

Q. Have you made any study of marine engineering or naval architecture?

A. I have studied the principles of marine engineering.

(Testimony of Baldwin M. Woods.)

Q. Have you given courses in it?

A. No. The course given in them are under my direction. I must qualify the "No," however, as I offer at the present time a course in vibration in machinery, with special reference to vibration of ship machinery, for naval officers, at the University.

Miss PHILLIPS: You may, cross-examine.

#### Cross Examination

Mr. LILLICK: Q. Professor Woods, I am not sure, but I think in your direct examination the other day you mentioned the name of Rear Admiral Taylor.

A. Yes.

Q. The Rear Admiral Taylor whom you mentioned is the gentleman who wrote the book, "Speed and Power of Ships"?

A. Yes.

Q. Have you used that book in courses that you have given at the University?

A. No, I have consulted it as a reference.

Q. Did you consult it as a reference before you performed the tests with these models?

A. No.

Q. Am I right in saying—

A. (Interrupting) If the Court please, I should not like to have a false impression. I believe that my assistant consulted it before the test was made.

Q. I am speaking only of your testimony, Professor Woods. Can you tell me in what proportion as to linear dimensions speed of similar ships are worked out?

(Testimony of Baldwin M. Woods.)

Miss PHILLIPS: Just a moment. If I understand counsel, you are going to go back over the cross-examination of last week.

Mr. LILLICK: No, in the examination this morning the witness was asked as to the proportions that he used for the models.

Miss PHILLIPS: Which I withdrew because he had already cover- [737] ed it fully, and I withdrew the question at the opening of the session. I went into that and found that that data was fully covered.

Mr. LILLICK: I think even with that latitude should be given me on cross-examination of the witness with respect to his testimony that he gave this morning in connection with the diagram drawn and submitted to your Honor with respect to the effect of one vessel striking another, as evidenced by the diagram, itself.

Miss PHILLIPS: I would not object to counsel cross-examining the witness on what he testified to this morning, but from the way he began I thought he was going to go over the ship model tests which he spent almost a day on last week. I object to counsel now continuing the cross-examination upon the model tests as not proper recross-examination.

Mr. LILLICK: If your Honor please, this witness has been brought back to testify again, and has testified as to the forces and resistance, and I cer-

(Testimony of Baldwin M. Woods.)

tainly have a right to cross-examine on that subject.

Miss PHILLIPS: Counsel spent a day on it last week and finished cross-examining him on that subject.

The COURT: I do not understand this is on the ship model tests.

Mr. LILLICK: This is on the general subject of the witness' opinion of the effect of a striking effect upon another vessel in connection with the diagram.

Miss PHILLIPS: I have no objection to counsel asking a question on that. I misunderstood his question. I thought he was dealing with ship model tests, and my objection is withdrawn.

The COURT: If there is no issue on it you may as well proceed.

Miss PHILLIPS: I understand that counsel is not cross-examining the witness on ship model tests, he is going to question him [738] on the subject covered in chief in this morning's examination.

Mr. LILLICK: I will ask Miss Phillips to object to those questions which she feels to be objectionable as I ask the question. May I have the last question repeated?

The COURT: Read the last question.

(Last question repeated by the reporter.)

A. That is considering one a model of the other?

Miss PHILLIPS: Are you relating that now to ship model tests?

(Testimony of Baldwin M. Woods.)

Mr. LILLICK: I am relating it to the diagram which was offered in evidence this morning, which is on the Court's desk.

Miss PHILLIPS: Relating the question to Exhibit 22, which is now lying on the desk of his Honor?

Mr. LILLICK: Yes.

The COURT: You are now being questioned from Exhibit 22.

A. I fear I could not answer it.

Mr. LILLICK: Q. Can you answer whether in computing the displacement of similar ships there is a ratio?

Miss PHILLIPS: I object to this question as not proper cross-examination, if your Honor please.

The COURT: I cannot understand the question but perhaps the witness does. What are you referring to?

Mr. LILLICK: Only a few moments ago the witness was asked as to the breadth of the two models.

The COURT: I presume you have a right to cover that.

Miss PHILLIPS: May I have the question read?

The COURT: Read the question.

(Last question repeated by the reporter.)

Miss PHILLIPS: My question related to the ratio of the beam of the models to the length, in proportion to the ratio of the beam of the prototype.

(Testimony of Baldwin M. Woods.)

The COURT: I understand that, but that is not what Mr. [739] Lillick is inquiring about.

Mr. LILLICK: May I have the question re-read?

The COURT: Read the question.

(Question repeated by the reporter.)

Miss PHILLIPS: That is objected to as indefinite.

Mr. LILLICK: It is as definite and specific as I can make it.

The COURT: Do you understand the question as propounded?

A. I should have to interpret it in terms of model testing. The question is not complete as it is asked.

The COURT: Will you reframe it?

Mr. LILLICK: Q. What is it you do not understand about it?

A. Ratio between displacement might be a ratio between displacement of any two vessels.

Q. We are speaking of the "Chicago" and the "Silver Palm," and the models that you used to work out a similitude between them.

Miss PHILLIPS: Now, then, I object to that as not proper cross-examination, he is going back to a cross-examination of the model tests. I asked him only as to the ratio of the beam to the length of the prototype. Now he is going back and questioning him on displacement.

Mr. LILLICK: May I be heard.

The COURT: Proceed.

Mr. LILLICK: The validity of the tests made by Professor Woods with these models had to be

(Testimony of Baldwin M. Woods.)

worked out on the basis of displacement in reference to the breadth of beam, and it is that particular point that I am now attempting to cover.

The COURT: Answer the question.

Miss PHILLIPS: May I have the question read again?

The COURT: Read the question.

(The question was read by the reporter.)

Miss PHILLIPS: Objected to as unintelligible, indefinite, [740] vague.

Mr. LILLICK: I will re-phrase the question.

Q. Professor Woods, in computing the corresponding displacements of similar ships, in what proportion do you compute that in relation to their linear dimensions? You can tell me?

A. In computing the displacement of ships the displacement is, roughly, proportionate to the cube of the linear dimensions.

Q. In computing them in that manner what relationship do the wetted surfaces and the immersed amidship areas have?

A. That would depend upon the beam, upon the ratio of the beam as to draft, and upon the curve of the ship lines.

Q. In the models that you used in the tests, what comparison did you have between the displacement of the wetted surface immersed at the beam on the model "Golden Boats" which was taken for the "Silver Palm"?

A. The mode of obtaining similar displacements—

(Testimony of Baldwin M. Woods.)

Q. (Interrupting) I beg your pardon, I do not want to interrupt you, but if you will answer the question, and then if you wish to explain explain it afterward. Might I have the question reread to the professor?

The COURT: Read the question.

(Last question repeated by the reporter.)

A. For the displacement I had ratios comparable to those of the prototypes by the simple expedient of having the weight of the two vessels, in the ratio of the weight of the prototype, and by having the lengths approximately.

Mr. LILLICK: Q. Do you know anything about the wetted surface of the "Silver Palm"?

A. I did not know the value of the wetted surface of the "Silver Palm," no.

Q. Did you know anything about how far the "Silver Palm" was immersed at the amidships area?

A. No.

Q. Did you know anything about the wetted surface of the "Chicago"? [741]

A. No.

Q. Did you know anything about——

A. I mean to say as to the exact value.

Q. Professor Woods, you knew nothing about the wetted surface of the "Silver Palm" and the "Chicago" as it was when the two vessels came in contact?

A. One cannot escape knowing something about the wetted surface of a vessel if he knows its length and displacement and general form.

(Testimony of Baldwin M. Woods.)

Q. What was the wetted surface of the "Chicago" used in your tests?

A. In model tests one avoids the necessity of making such complicated computations by using models which simulate the original. It is not necessary in this test to have a close approximation to the wetted surface.

Mr. LILLICK: May I ask that the question be re-read to the witness?

The COURT: Read the question again.

(Last question repeated by the reporter.)

A. I used that which the model exhibited when immersed at the weight specified in the test.

Mr. LILLICK: Q. You have seen not only the model of the "Chicago" offered in evidence, which I hold up this way, but photographs, and it is your testimony that the model which you used to work out the similitude between them has a wetted surface comparable to that of the "Chicago"?

A. For the purpose of this test, yes.

Q. The test was a very complicated one, was it not, Professor?

A. The test was a simple one on a complicated problem.

Q. On a complicated problem?

A. On a complicated problem.

Q. And with a complicated problem accuracy of figures, if a valid result is to be obtained must be your premise, isn't that true?

A. No; in a geometrical plan, for accuracy, the dynamical [742] elements simulated is the important thing.

(Testimony of Baldwin M. Woods.)

Q. Professor, I would like to read this to you and ask you whether you agree with it, from your knowledge of dynamics and the tests that you have made. "Rear Admiral D. W. Taylor, U. S. N., in his *Speed and Power of Ships*, the book which contains the well-known and widely-used curves of residuary resistance per ton of displacement.

"The corresponding speeds for similar ships are speeds proportional to the square roots of their linear dimensions.

"The corresponding displacements of similar ships are displacements proportional to the cubes of their linear dimensions.

"The corresponding residuary resistances for similar ships at similar speeds are resistances proportional to the cubes of their linear dimensions.

"The corresponding horsepowers required to overcome the residuary resistance for similar ships at similar speeds are powers proportional to the 3.5 powers of their linear dimensions.

"The corresponding wetted surfaces and immersed amidship areas of similar ships are proportional to the squares of their linear dimensions."

Do you agree with that statement of the premise upon which tests of this character must be made?

A. Not tests of this character.

Miss PHILLIPS: Counsel has asked two questions in one.

Mr. LILLICK: I will separate it.

Miss PHILLIPS: First, does he agree as to those things, that is one thing.

(Testimony of Baldwin M. Woods.)

Mr. LILLICK: Do you agree with that?

The COURT: He has answered both by saying that as far as tests of this character are concerned that he does not agree. Is that correct?

A. I agree with that for tests for the purpose for which that section is written. I should like to call attention [743] to the fact that residuary horsepower is a fraction of the horsepower engendered.

Mr. LILLICK: Q. What effect, in your opinion, would a horsepower of 18,000 on the "Chicago" actually applied at the moment of impact and a horsepower of 7500 upon the part of the "Silver Palm," at the moment of impact, have?

A. May I have that question read again?

The COURT: Read the question.

(The question was read by the reporter.)

A. I cannot answer, I do not understand. What kind of effect?

Mr. LILLICK: Q. As to a comparison between them or respectively upon each of the vessels, themselves, and an experiment or test performed by you where there was no horsepower.

The COURT: Do you mean as applied to this case toward driving a ship forward?

Mr. LILLICK: Yes.

A. A power of 18,000 on the "Chicago," U.S.S. "Chicago" would probably be sufficient to drive it at a constant speed at a rate of about 16 knots. I am not able to estimate more than roughly what the horsepower for the "Silver Palm" would do, since I

(Testimony of Baldwin M. Woods.)

had understood that 5500 was the horsepower applied to her for a speed of 13 knots.

Q. In your opinion, would the application of the horsepower I have mentioned to those respective vessels at the moment of impact have modified in any degree the tests made by you with models where no power was applied to the models?

A. The modification would have been too small to be measured.

Miss PHILLIPS: I am going to make the objection that counsel is going beyond all bounds of reasonable cross-examination. He spent a day on this last week cross-examining the witness upon the relationship of that and now he is going all over it. I absolutely object to this cross-examination, and I think, your [744] Honor, the record will bear me out.

Mr. LILLICK: May it please the Court, the last question propounded to the witness discloses that the witness is of the opinion that there would have been only a negligible difference with the application of this horsepower.

Miss PHILLIPS: I renew the objection.

Mr. LILLICK: I am satisfied to leave it at that.

Q. Professor Woods, I call your attention to the diagram offered in evidence this morning, U. S. Exhibit 22, and the pencil drawing at the bottom, the "S" upon which I understand represents the angle of approach of the "Silver Palm," and the "C" the axis of the "Chicago." In this diagram what distance did you mean to indicate between the

(Testimony of Baldwin M. Woods.)

numerals "1" and "2" at the respective points on the diagram?

A. I did not intend in the drawing to indicate any distance to scale, but to show what sequence of events might happen, with the approximate geometrical position of the side wall or plating of the "Chicago," and the two bulkheads shown.

Q. Without respect to the distance between the skin of the "Chicago" and the first bulkhead shown by "2"—you mean you intended no distances indicated?

A. No, I intended none.

Q. And between the figures "2" and "3" you intended no indication of distance?

A. None other than would be generally inferred from the diagram.

Q. And also no distance between the figures "3" and "4"?

A. With the same limitation given.

The COURT: Except as to these points, the first bulkhead and second bulkhead?

A. Yes.

Q. That is the only point where there might be?

A. Of course, I assumed by the geometry of the figures that is shown.

Mr. LILLICK: Q. What do you mean by the geometry of the figures that is shown?

A. In other words, that the point of [745] contact as given by the figure "1" should not be taken at the immediate junction, for example, of the side frame and the bulkhead, without considering the

(Testimony of Baldwin M. Woods.)

compound effect, for example, in this diagram; I took separately the effect of the side plates and the bulkhead.

Q. And the distance between "1" and "4" being the distance that you entered, the assumption that you made with respect to the diagram, you paid no attention to whether it was 30 feet or 10 feet?

Miss PHILLIPS: Your Honor, that has been asked and answered.

Mr. LILLICK: I beg your pardon.

Miss PHILLIPS: He has already testified this diagram did not represent distance, and he has been asked and answered that three times already.

Mr. LILLICK: I have a right to ask it six times.

Miss PHILLIPS: I think the rest of us have some rights on it, and I think the Court has some rights not to have counsel repeat questions unnecessarily.

Mr. LILLICK: I am not going to repeat them unnecessarily. As far as I know that is the first time I have asked that question. May I have it repeated?

The COURT: Read the question.

(Last question repeated by the reporter.)

A. The assumption being made is simply that in the penetration the position indication was reached.

(Testimony of Baldwin M. Woods.)

Mr. LILLICK: Q. Without any depth?

A. Well, they would not be reached if the depth is greater than the penetration.

Q. Then the point from 1 to 4 is intended by you to be designated on this diagram is the distance from the skin of the "Chicago" to the second bulkhead: Is that right?

A. Yes.

Q. And in drawing the diagram you assumed, I understand, that the "Silver Palm" penetrated the "Chicago" in a straight line: Is [746] that right?

A. For simplicity in this diagram I assumed that the main axis of the "Silver Palm" did not turn to any extent. However, had it turned that would not invalidate the reasoning concerning the several points of penetration.

Mr. LILLICK: Might I ask that the question be read again? The witness does not directly reply to my question. Might I have it repeated again?

The COURT: Read the question.

(Last question repeated by the reporter.)

A. No, that is not essential.

Q. I am not asking you that.

A. I am attempting to answer.

The COURT: He is not asking whether it is essential to that, but whether as a matter of fact in drawing the diagram you did not assume that.

A. I did not limit myself to that.

Mr. LILLICK: Q. I am looking at the diagram, I don't know what is in your mind, and I don't

(Testimony of Baldwin M. Woods.)

know what was in your mind when you drew the diagram. In looking at the diagram, it seems to me that you have indicated that the "Chicago's" axis was on one line and the "Silver Palm's" on another, and that you assumed for the purpose of the diagram that the "Silver Palm" had gone straight in. Did you or did you not?

A. I should say not. The reason that I hesitated in answering that is I was considering the total situation which I was trying to picture, and I was attempting to recall in each step what I had assumed concerning the axis of the "Silver Palm."

Q. In your testimony this morning, Professor Woods, you used the words, as I remember it, "In arguing for this position, I did this," etc. Did you intend this diagram as a picture for a set of facts that you were testifying to?

A. The answer is No. Your Honor, I do not recall that statement. Would I be permitted to hear it from the record, that I said that I argued [747] it? I will let it pass.

Q. Professor Woods, I show you Respondent's Exhibit No. 9, and I call your attention to the portion of the bow of the "Silver Palm" in this photograph taken after the vessel was put in dry dock, and call your attention to the lap in the stem which you testified this morning was pushed to starboard on the "Silver Palm." Would you or would you not say in looking at this photograph that the bow

(Testimony of Baldwin M. Woods.)  
of the "Silver Palm" had been pushed bodily to port?

A. The major portion, the major part of the result is the turning to port as far as one can judge from this picture.

Q. So that, in truth and in fact, the testimony that you gave this morning that the stem of the "Silver Palm" was pushed to starboard had reference only to that portion of the fold of the stem that on this photograph is shown to be but a minor part of the bow: Is that a fair statement?

A. It is, yes.

Q. In the diagram which was offered in evidence as U. S. Exhibit 22 you did not take into consideration whether there was any difference in the resistance of the skin of the "Chicago" as compared with the strength of the bow of the "Silver Palm," did you?

A. I assumed that the bow of the "Silver Palm" was strong enough, even though it might fail in the progress, by which I mean be deformed, to continue through the side plates, through the first bulkhead and up against the second.

Q. And as it went through the first bulkhead and up to the second bulkhead it is your opinion that the stem of the "Silver Palm" kept intact?

A. No, I did not say that.

Q. Then I misunderstood you. When, in your opinion, did the stem of the "Silver Palm" commence to be deformed?

(Testimony of Baldwin M. Woods.)

A. Its deformation, as was the deformation of the "Chicago" was probably a continuous process, very difficult to analyze, continuous from the time of the impact to the time at which there was no relative motion of [748] the two vessels.

Q. I call your attention to U. S. Exhibit No. 2-C, and ask you what, in your opinion, caused the cutting of the port bow of the "Chicago" at the forward portion to which I am pointing?

A. That is a question of surmise. If I have to answer I should say it was probably the port anchor of the "Silver Palm."

Q. Is not the balance of your testimony surmise, because you don't know what happened?

A. It is a hypothetical situation, it is answering a hypothetical situation.

Q. It is answering a hypothetical situation based purely on theory, isn't that true?

A. Following an observed experiment.

Q. But as far as practical action on these two vessels is concerned, you know nothing about it?

A. I have seen neither one of them since the accident.

Q. Taking the stem of the "Silver Palm" shown on Respondent's Exhibit 14, and bearing in mind the overhang of the "Chicago," what portion of the stem of the "Silver Palm"—I am referring now to Respondent's Exhibit 14—was it that commenced to cut into the port side of the "Chicago"?

(Testimony of Baldwin M. Woods.)

Miss PHILLIPS: I believe, your Honor, this is not proper cross-examination. I did not question this witness upon the actual contact between the two vessels.

Mr. LILLICK: Miss Phillips, I am directing this testimony to an explanation of U. S. Exhibit 22, with the testimony that the witness has given with respect to the effect of penetration and what happened to the bow of the "Silver Palm."

Miss PHILLIPS: Your Honor will remember that my questions to this witness upon what might happen after penetration of the side of the "Chicago" were all directed to contradicting the testimony of the witness Dickie, yesterday, that invariable results were obtained. [749]

Mr. LILLICK: May it please your Honor, the only reason for the length of my cross-examination is to definitely and positively put in this record that this is all hypothetical from Professor Woods, and when checked with actually what happened, the two do not check. That is the only object of the cross-examination, and I submit I am entitled to have an answer to the last question.

Miss PHILLIPS: The witness has said it was hypothetical.

The COURT: In this particular instance; he formerly testified to what occurred of the injury at the angle where it was struck, the force which was struck, and what the sequence of events would be.

(Testimony of Baldwin M. Woods.)

You have not made any study of these two vessels where the penetration occurred?

A. No.

Q. In other words, what you have done is simply surmised from the penetration?

A. Yes.

Q. The two vessels you have not made a study of?

A. No.

Mr. LILLICK: We submit to your Honor's ruling on that.

Q. As I understand you now, Professor, with actual photographs before you of the resultant damage to the two vessels, you feel that, coupled with your theoretical knowledge, you are unable to answer questions propounded to you by me looking toward an explanation of the reason for the damage shown in the photograph: Is that right?

The COURT: I do not want to put the Professor in a hole. I think he has answered he never made a study of it, and consequently he is only expressing himself as far as the theoretical situation exists of the contact of the two ships, isn't that it?

A. Yes.

Q. In other words, you have not made a study of these photographs?

A. No.

Q. That is a feature he has not made a study of. Isn't that correct?

A. Yes, I have not studied the photographs, but I could [750] study them.

(Testimony of Baldwin M. Woods.)

Q. But you have not made that study?

A. No.

Mr. LILLICK: I feel like apologizing to the Court for pursuing this line of cross-examination a little further after the ruling of your Honor, but, nevertheless this morning the witness testified from the photograph calling attention to certain convolutions in the after part of the cut, and since his testimony was directed to that point this morning it is apparent that the witness was willing this morning to testify with respect to a theoretical hypothesis followed by what he read from the photograph. Now, I would like to have the witness reply only to one question with respect to the forward part of the photograph. Professor Woods, I show you United States Exhibit 2-C, and call your attention to the cut in the forward portion of the photograph and ask you whether you will give me your opinion as to whether that was caused by the stem of the "Silver Palm" or by a part of her bluff bow.

The COURT: Answer that if you feel you can answer that by viewing the photograph.

A. I should be unable to say.

Mr. LILLICK: Q. And yet you are willing to say that the convolutions in the after part of the cut were due to the sequence of pressures that occurred while the "Silver Palm" and the "Chicago" were coming together?

A. I think it could be due to that.

(Testimony of Baldwin M. Woods.)

Q. And yet, again, that is a surmise on your part?

A. No. That was the result of an analysis of the assumed events.

Q. And now is it based upon a hypothesis without knowing the facts?

A. Well, an analysis based upon—an analysis which was valid in so far as the hypothesis was valid, but without knowing the geometrical framework facts of this case. [751]

Q. And all of the forces going into the blow, what occurred with the engines and otherwise, that is true, you did not know that?

A. No, I did not know all of the forces going into it.

Q. This morning you gave us a statement as to the ratio of the length of the model; if the ratio of the length of the model to the prototype was 150 to 1 and a speed representing 12 knots was engendered on the model, would the kinetic energy thus created be comparable?

Miss PHILLIPS: I wish to point out that no such question was asked the witness. Counsel objected and I withdrew it. He is now going back to what was covered last week.

Mr. LILLICK: I withdraw my question if your question with respect to 150 to 1 was withdrawn.

Miss PHILLIPS: It was withdrawn a half hour ago. That was all covered in the examination of last week.

(Testimony of Baldwin M. Woods.)

Mr. LILLICK: I withdraw my question.

Q. As I understand you, Professor Woods, you have no means of knowing where the first contact between the two vessels came?

A. No.

Q. So that in the tests you simply computed the point of contact at a certain distance from the stem of the "Chicago"?

A. I was informed approximately where it had been.

Miss PHILLIPS: Now, your Honor, he is beginning to go over what he covered last week.

Mr. LILLICK: That is all.

Miss PHILLIPS: Your Honor, Professor Woods asked if he might be permitted to take the models back.

The COURT: I understood from Mr. Lillick there was no objection to their being taken back.

Mr. LILLICK: We have one more witness on surrebuttal, and as soon as he is finished they may be taken back. [752]

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FRANK BARROWS FREYER,

Direct Examination (resumed).

Miss PHILLIPS: Your Honor will remember that in starting yesterday with Captain Freyer I qualified him and then there was a little mix-up in the exhibits. May I have the record straightened

(Testimony of Frank Barrows Freyer.)

out up to the last question I asked on the qualifications and then begin again?

Mr. LILLICK: May it please the Court, I have not gone over the record. If the testimony is in and the witness has made an error with respect to it, I think we are entitled to have the record show it.

Miss PHILLIPS: It was just that he was looking at the wrong plot.

Mr. LILLICK: Yet the testimony went in——

Miss PHILLIPS: Let us not talk about it, and let us go ahead. I am going to begin again with the first plot, and your Honor will see what it was. It will simply take a little more of the Court's time. By the way, have you the exhibits of Captain Cox.

Mr. LILLICK: Which ones do you want?

Miss PHILLIPS: I am asking counsel to produce the original sketches that Captain Cox made at the time his deposition was taken, in which he diagrammed the position of the "Chicago," the position of the "Silver Palm," the distances and angles and times. He made three such exhibits. They were not in court yesterday attached to the depositions, as I pointed out, and I went ahead with the photostatic copies. I am now asking for the original exhibits.

Mr. LILLICK: Those exhibits were brought out to the Court yesterday and given to the Clerk.

Mr. GEARY: Here they are.

The COURT: I believe I have the photostat copies. [753]

(Testimony of Frank Barrows Freyer.)

Miss PHILLIPS: Yes, these are the originals.

Q. Captain Freyer, are you familiar with these three sketches?

A. I am.

Q. Have you attempted to plot the positions of the two ships as shown on those three exhibits, Exhibits 1, 2, and 3, I think they are, in the deposition of Captain Cox?

A. I have made a plot of those on what is called a mooring and maneuvering board, setting forth an assumed speed for the "Silver Palm," angle at which the "Silver Palm" cited the "Chicago," and the angles and distances at which the "Silver Palm" sighted the "Chicago" and the angle of the collision as set forth in those three exhibits.

Q. Of Captain Cox's testimony?

A. Yes.

Q. Captain Freyer, will you take your first mooring board that shows position 1 of the "Silver Palm" and position 1 of the "Chicago" at the bottom of the exhibit indicated as a blur. You placed those what distance apart?

A. Those are placed at a distance of 2500 yards.

Q. And at what bearing?

A. With the "Chicago" bearing 16 degrees on the "Silver Palm's" starboard bow.

Q. In your position No. 2 the respective vessels are what distance apart?

A. I have placed the "Chicago" at 1800 yards and 26½ degrees on the "Silver Palm's" starboard bow?

(Testimony of Frank Barrows Freyer.)

Q. And what distance did you have the "Silver Palm" cover between her first and second position?

A. That is 326 yards, which represents the distance the "Silver Palm" would cover at an average speed of 13.03 knots for three-quarters of a minute.

Q. And the distance the "Chicago" covered between positions 1 and 2 was how much?

A. That is 500 yards, which for three-quarters of a minute would give an average speed of 20 knots.

Q. The distance between the "Silver Palm's" position 2 and the collision point is how far?

A. That is 491 yards, which was based [754] on an average speed of 11.78 knots for one and a quarter minutes.

Q. The "Silver Palm" covered from her first position to the collision point how many yards?

A. 817 yards.

Q. And in what space of time?

A. Two minutes.

Q. And that gave her an average speed over the ground of how much?

A.  $12\frac{1}{4}$  knots.

Q. For the "Chicago" to go from position 2 to 3 required her to cover how many yards?

A. That distance is 1300 yards, which in one and a quarter minutes would give an average speed of 31.2 knots.

Q. If the "Chicago," on reaching from 1 to 2 had an average of 20 knots, then from position 2 to 3 had to have an average of 31 knots, to what

(Testimony of Frank Barrows Freyer.)

speed would the "Chicago" have to reach in order to cover the distance from position 2 to position 3 in one and a quarter minutes?

A. With the "Chicago" making 21 knots at position 2, an average speed of 31.2 knots between positions 2 and 3 would require a speed at position 3 of 41.4 knots.

Miss PHILLIPS: I will offer this plot in evidence as Government's Exhibit next in order.

The COURT: It will be received as U. S. Exhibit 23.

(The plot was marked "U. S. Exhibit 23.")

Miss PHILLIPS: I might state the purpose of these various charts is to show that Captain Cox testified as to mathematical impossibilities. That is my sole purpose in offering them.

Q. Now, did you make a second plot of the position of the two vessels?

A. I did. That was the one that was erroneously introduced yesterday; as I stated yesterday, there were four of these positions in which it was assumed there might have been an error in estimating the distance between the two ships by the "Silver Palm", so that to see what difference there might have been in estimating the distance, there were three other plots in which the distances were reduced from 2500 yards to 2000 yards, 1500 yards, and [755] 1000 yards; that is the distance between the No. 2 "Silver Palm" and "Chicago" were reduced from

(Testimony of Frank Barrows Freyer.)

1800 yards in the same proportion that 2000, 1500 and 1000 are in proportion to 2500 yards.

Q. That is, you, in the second, third, and fourth plots, as I take it, what you assumed was that Captain *Coxe*, as to the angles, might have been correct, but that he made a mistake as to the distance?

A. Yes.

Q. Upon what assumption or what reasoning did you base such an assumption?

A. It was based on there being a diversity in the estimates of distance as between the officers of the "Silver Palm" and those of the "Chicago."

Q. That is, a mistake as to distance was possible?

A. Yes.

Q. But as to the angle it was probably correct?

A. Yes. I might qualify that, that there seems to be a better chance of there being an error in the estimated distance than in the bearing.

Q. Now, let us take the second plot. In that plot you placed the two ships at what distance apart?

A. I might say that in this and in the next three exhibits, that is, for all four, the position of the "Silver Palm" is the same, because the assumptions are the same as to her speed, her course and speed. The only difference then would be a difference in the position of the "Chicago" and in the results.

Q. Now, in your second plot, position 1 of the "Chicago," which appears as a big blotch in the

(Testimony of Frank Barrows Freyer.)

fog, and position No. 1 of the "Silver Palm," the distance is how far?

A. That is 2000 yards, and the distance between No. 2 position of the "Silver Palm" and the "Chicago" reduced proportionately is 1440 yards.

Q. And the third position of the two vessels is the collision point?

A. Being the same as before.

Q. Now, how far would the "Chicago" have had to move from position 1 to 2?

A. That is 325 yards, which for three-quarters of [756] a minute would give an average speed of 13 knots.

Q. And the distance of the "Chicago" from 2 to 3 is how far?

A. 932 yards, which for one and a quarter minutes gives an average speed of 22.37 knots.

Q. What rate of speed would the "Chicago" have had to reach in order to make good this yardage between positions 2 and 3, that is, how far would she have had to go to get an average of 22 and a fraction knots?

A. That is 932 yards.

Q. Yes, but what speed would she have to make in order to cover that distance in a minute and a quarter, which would make an average of 22 and a fraction knots?

A. As I said, the average speed was 22.37 knots.

Q. All I want to know in order to get that clear is what speed would she have to reach for that time?

(Testimony of Frank Barrows Freyer.)

A. I started at position No. 1 placing the "Chicago" at a speed of 9 knots, and letting her work up to a speed of 17 knots at No. 2, which would give an average of 15 knots; then taking that speed at No. 2 of 17 knots, in order to average 22.37 knots would have required at position No. 3, the point of collision, that she was making 27.74 knots.

Q. What change in course would the "Chicago" have had to have made between positions 1 and 2—can you estimate that, Captain Freyer?

A. The course made good between those positions was 319 degrees, and I might add that it would require the "Chicago" to have had a tactical diameter of 420 yards to have gone from position 1 to position 2.

Miss PHILLIPS: I will offer that plot in evidence as our exhibit next in order.

The COURT: It will be received as U. S. Exhibit 19, having been formerly marked that number.

(The plot was marked "U. S. Exhibit 19.")

Miss PHILLIPS: Q. Now, the third plot, you assumed a distance [757] between the two vessels at the start of how many yards? Will you point that out to the Court? The third plot assumes an initial distance between the two vessels of how many yards?

A. At position 1 1500 yards, the distance at position 2 reduced proportionately would be 1080 yards, that is the proportion of 2500 as to 1500, and as 1800 is to 1080.

(Testimony of Frank Barrows Freyer.)

Miss PHILLIPS: Your Honor has not had an opportunity to read the depositions. Captain Cox's testimony, parenthetically, was the two vessels were sighted at 2500 yards two minutes before the collision; 45 seconds before at a distance of 1800 yards, and then a minute and a quarter later they were in collision. He testified as to the angles. Now, as to the three exhibits Captain Freyer is assuming that Captain Cox's estimates of angles are correct, but that he was erroneous in his distance. Each exhibit is based upon that theory.

Q. Now, Captain Freyer, taking your third plot, the distance which the "Chicago" had to make between position 1 and 2 is how far?

A. It is 160 yards, which for three-quarters of a minute gives an average speed of 6.4 knots.

Q. The distance from position 2 to 3 of the "Chicago" was how far?

A. 595 yards, which for one and a quarter minutes gives an average speed of 14.28 knots.

Q. The change in positions from 1 to 2 would have required what sort of a change in the "Chicago's" heading?

A. The course made good by the "Chicago" from 1 to 2 position was 309 degrees, and that would have required the "Chicago" in going from position 1 to position 2 to have a tactical diameter of 200 yards.

Q. Of 200 yards?

A. Yes.

(Testimony of Frank Barrows Freyer.)

Q. That is a tactical diameter of her own length?

A. Yes.

Miss PHILLIPS: I offer that in evidence as Government's Exhibit next in order. [758]

The COURT: It will be received as U. S. Exhibit 24 in evidence.

(The plot was marked "U. S. Exhibit 24.")

Miss PHILLIPS: The next one, will you explain that to the Court, the distance between the positions 1 and 2 of the "Chicago"?

A. As I stated before, the distance assumed between position 1 of the two ships was reduced from 2500 to 1000 yards, the distance between the 2 positions, being reduced proportionately, was 720 yards. The result is that the distance between the "Chicago" No. 1 and No. 2 positions is 55 yards, which for three-quarters of a minute gives an average speed of 2.2 knots. The distance between No. 2 and No. 3 positions is 275 yards, which for one and a quarter minutes gives an average speed of 11 knots.

Q. For the "Chicago" to move from position 1 to position No. 2, what motion in the water would she have had to make?

A. The course is 241 degrees, which would have been practically astern.

Q. What is that circle in the fog bank there on that fourth sketch,—what does that represent?

A. That represents a point 1000 yards from position 1 of the "Silver Palm."

(Testimony of Frank Barrows Freyer.)

Q. In going from position 1 to 2, would the "Chicago" have had to go backward, be moving astern?

A. If that were the bridge of the "Chicago."

Q. Would it require any lateral motion, side-wise motion, in order to make that, or could you tell?

A. That would depend on the heading of position No. 1.

Q. What tactical diameter would the "Chicago" have to have to make this last change of course indicated in your fourth plot, or can you state it?

A. There would have been no tactical diameter in such case, as I think, in my opinion, she would have had to maneuver in that position by use of rudder and propeller. [759]

Miss PHILLIPS: I will offer that as Government's Exhibit next in order.

The COURT: It will be received as U. S. Exhibit 25.

(The plot was marked "U. S. Exhibit 25.")

Miss PHILLIPS: Q. Captain Freyer, have you made another plot of the positions of the "Chicago" and the "Silver Palm"?

A. I have.

Q. Will you explain to the Court the premise or theory of this last plot?

A. This is a plot to show in general the position of the "Silver Palm" as related by the "Chicago," with the basis in time element of one and three-

(Testimony of Frank Barrows Freyer.)

quarter minutes between positions 1 and 2. In constructing this I first placed the vessels at the collision point, with the "Chicago" on course 350 degrees, and with the "Silver Palm" at an angle of 45 degrees to the "Chicago." I then moved the "Chicago" back 262 yards, which distance is represented by assuming that the speed at position 2 was zero and her speed at 1 was 9 knots, an average of speed of four and a half knots, which for one and three-quarters minutes gives 262 yards.

Q. If I understand you correctly, in the position of the "Chicago" in the lower part of the chart, you have the "Chicago" on what course?

A. At that time her course was at 330.

Q. And she is going at nine knots?

A. Yes.

Q. Then for one and three-quarters minutes you have her moving forward at an average speed of four and a half knots?

A. That is right, and then a change of course to 350.

Q. That is premised then on what principle, when you say the "Chicago's" speed dropped from nine knots to an average speed of four and a half knots in two minutes?

A. One and three-quarter minutes.

Q. Thank you, one and three-quarters minutes.

A. You mean how [760] did I determine the 260 yards?

Q. Yes.

(Testimony of Frank Barrows Freyer.)

A. That was obtained by multiplying  $4\frac{1}{2}$  by 100, or 450, which is the number of yards made in three minutes, and dividing that by 3 for the number of yards in one minute, and by multiplying by one and three-quarters for the number of yards in one and three-quarter minutes.

Q. What I mean is, that would give the "Chicago" at the moment of collision what speed?

A. At zero speed.

Q. She would be stopped in the water?

A. Yes.

Q. How have you placed the "Silver Palm" in this last exhibit?

A. At position 2 the "Silver Palm" was placed at an angle of 45 degrees from the "Chicago," and then it was assumed that the "Silver Palm's" speed at position 2 was 11 knots, and at the beginning of the one and three-quarters minutes was  $13\frac{1}{2}$  knots, an average speed of  $12\frac{1}{4}$  knots, which for the one and three-quarters minutes gives an advance of 714 yards, and the "Silver Palm" was accordingly moved back at the angle of impact a distance of 714 yards to establish position 1.

Q. Then between the first two positions you moved each vessel back from the collision point, that put the "Silver Palm" in what relation to the "Chicago"?

A. That placed the "Silver Palm" 17 degrees on the "Chicago's" port bow, a distance of 980 yards.

(Testimony of Frank Barrows Freyer.)

Q. That placed the "Chicago" in what position with respect to the "Silver Palm's" bow, to one standing on the deck of the "Silver Palm"—what did the "Chicago" bear, I mean, on the "Silver Palm's" bow?

A. 7 degrees on the "Silver Palm's" starboard bow, with the "Silver Palm" on course 125 degrees.

Q. I did not get the degrees the "Chicago" would bear.

A. 7 degrees.

Q. I observe at the top of this sketch, Captain Freyer, you have drawn a course in red. What does that represent?

A. That was [761] an endeavor to show the conflict in the testimony of the "Silver Palm" as compared with that of the "Chicago," and the position was obtained by laying off from position 1 of the "Chicago" a line 168 degrees, which was the bearing of the "Chicago" as given in Exhibit 1 Cox, and then placing the course 156 degrees, the course Captain Cox of the "Silver Palm" said he was on.

Q. In this last part of the sketch you place the "Silver Palm" on course 156 degrees true?

A. Yes.

Q. Which was the course Captain Cox said he was on?

A. Yes.

Q. That would place the "Silver Palm" on which bow of the "Chicago"?

A. That would place the "Silver Palm" 18 degrees on the "Chicago's" starboard bow.

(Testimony of Frank Barrows Freyer.)

Q. So that if the "Silver Palm" had in fact been on course 156 true and if the "Chicago" had in fact been on course 350 degrees true, the witnesses on the "Chicago" would have had to have seen the "Silver Palm" on——

Mr. LILLICK: I beg your pardon——

Miss PHILLIPS: Q. (Continuing) —on which side?

Mr. LILLICK: Let the witness testify.

Miss PHILLIPS: I could not possibly lead Captain Freyer, he knows more in a minute than I do in a year.

Mr. LILLICK: That is a very leading question.

Miss PHILLIPS: I was trying to save a little time, but I will withdraw it.

Q. Captain Freyer, if the "Silver Palm" had in fact been on course 156 true, and if the "Chicago" had in fact been on course 350 true, from which side would the witnesses on the "Chicago" have seen the "Silver Palm"?

A. If the "Chicago" had been 16 degrees on the "Silver Palm's" starboard bow then the "Silver Palm" would have been 18 degrees on the "Chicago's" starboard bow.

Q. And the captain of the "Chicago" would have seen the "Silver [762] Palm" on which side?

A. On the starboard side.

Q. On the starboard side?

A. Yes.

(Testimony of Frank Barrows Freyer.)

Miss PHILLIPS: I will offer this in evidence as Government's Exhibit next in order.

The COURT: It will be received as U. S. Exhibit 26.

(The plot was marked "U. S. Exhibit 26.")

Miss PHILLIPS: Q. Captain Freyer, looking again at your exhibit, and taking your first position in which you placed the "Silver Palm" on course 125 true, with her seeing the "Chicago" on the starboard, as you have in this, what change of course, if any, could the "Silver Palm" have made to avoid a collision? Have you got your dividers here, or your navigational instruments?

A. Yes. The "Silver Palm" should have changed course to either—a change of course, as shown in this plot to either port or starboard by the "Silver Palm" would have avoided the collision, if the change in course had been sufficient.

Q. Suppose you take some tactical diameter for the "Silver Palm," take any one that you think a possible one, I do not care what you do, and illustrate to the Court what could have happened in the event that the "Silver Palm" had put her rudder, let us say right rudder?

A. If we assume that the tactical diameter of the "Silver Palm" is 1000 yards, which is almost double that of the "Chicago," and that her advance through the water was 150 yards before beginning to turn, the pencil line which I will mark A-B would have been her course.

(Testimony of Frank Barrows Freyer.)

Q. That is, that would represent a change of course by putting the rudder hard right and giving the "Silver Palm" a tactical diameter of 1000 yards and an advance of 150 yards before she begins to turn: Is that right?

A. Yes.

Q. Suppose her tactical diameter were less, say 600 yards.

A. Then her course would have been along the line marked A-C. [763]

Miss PHILLIPS: You may cross-examine.

#### Cross Examination

Mr. LILLICK: Q. Captain Freyer, you took the distance of 2500 yards used in your first diagram from the testimony of Captain Cox, did you?

A. More specially from Silver Palm Exhibit No. 1 Cox.

Q. And that was put in the record at the time Captain Cox's deposition was taken, as I remember it?

A. As I remember.

Q. I think not, I know you were not there when the depositions were taken, Captain.

A. No.

Q. From your own experience at sea, Captain, is it not extremely difficult to estimate the distance between you on one ship proceeding rapidly toward another ship, when that ship is rapidly coming toward you?

(Testimony of Frank Barrows Freyer.)

A. I think that those with training can make a fair estimate.

Q. Do you think you could make a fair estimate when the vessels are proceeding, one at 12 knots an hour and the other at 13½ knots?

A. You can estimate fairly closely whether a ship is 500 or 1000 or 1500 yards. Beyond say 1000 yards it becomes more difficult. It is still more difficult in low visibility.

Miss PHILLIPS: I want to point out, your Honor, that counsel now is proceeding beyond the limits of cross-examination.

Mr. LILLICK: Miss Phillips—

Miss PHILLIPS: Just a moment, let me state what I started to say. I offered the captain solely for the purpose of computing a chart from what Captain Cox said. I have not questioned Captain Freyer upon the method of computing distance or anything of that sort, not but what I know he could do that. Just in the interest of not protracting this case unnecessarily I am making the objection that this is not within the limits of cross-examination.

Mr. LILLICK: May it please the Court: On [764] cross-examination, when I am cross-examining a witness on a subject so involved as diagrams put in evidence before this Court which result in the conclusion that there could not have been a collision, at all, I certainly have a right to elicit from the witness an explanation that will enable the Court

(Testimony of Frank Barrows Freyer.)

to look at the diagram and come to a correct conclusion about it.

The COURT: As I understand, Mr. Lillick, the diagrams in this case have all been plotted from assumed data, and while there might have been an error on the part of the person who compiled the data—whether it was a difference of angle, etc., was not gone into with the witness, so the only thing we had on the direct examination was the plotting of this data, without reference to how the data was obtained.

Mr. LILLICK: But, your Honor, I am examining a witness put on the stand as an expert, who is qualified because of his being a navigator, because of his education.

The COURT: I do not understand you question the fact that he was a competent person to testify to what he testified to or make the plot he did; the other matter may be pertinent to the issue, but it is not cross-examination; it was not touched on the direct examination, and I presume you would have to call him as your witness for the purpose of getting that data.

Mr. LILLICK: I will be very glad to call him as my witness, if that be the only privilege the Court will give me, at the end of my cross-examination, when I will notify the Court and Miss Phillips that I am calling him as my witness.

The COURT: Of course, the situation is this: an objection was made, but where, as I say, the subject-

(Testimony of Frank Barrows Freyer.)

matter is pertinent to the inquiry as to the possibility that the witness, whose testimony I have not yet read, may have erred in the time or the dis- [765] tance, etc., why he should have erred and how it would have been possible for him to err, I think that is something that you will have to bring out as your own testimony, in view of the objection of Miss Phillips.

Miss PHILLIPS: Your Honor, I can see we are going to run into tomorrow now. I could have finished the case this afternoon.

Mr. LILLICK: May it please the Court, I am unconcerned whether we finish this afternoon or next month. I must try this case in order to bring before the Court facts which will be understandable.

The COURT: The ruling is you are exceeding the scope of cross-examination at this time, and the objection will be sustained.

Mr. LILLICK: Q. Captain Freyer, from your own experience you are able to tell me, and perhaps without even computing it, over how many feet a vessel will proceed in one minute at a rate of 12 knots per hour. Do you know it off-hand, without figuring it?

A. 12 knots?

Q. Yes.

A. 12 knots, 1200 feet.

Q. A vessel making 12 knots an hour is covering, in fact, as I understand it 1215 feet per minute. Would you say that is approximately correct?

(Testimony of Frank Barrows Freyer.)

A. No, 1200 even.

The COURT: 1200 even?

A. Yes.

Mr. LILLICK: Q. So that in one minute if she makes 1200 feet, in ten seconds how much?

A. 200 feet.

Q. Now, if another vessel approached at  $13\frac{1}{2}$  knots an hour, that would be roughly 225, or is that too much, in 10 seconds?

A. 225.

Q. Yes.

Miss PHILLIPS: Your Honor, I want to make the objection that counsel is proceeding in the face of the Court's ruling. [766]

Mr. LILLICK: This is direct examination, I am making the witness my own.

Miss PHILLIPS: Let me proceed and close my case, and counsel can then proceed.

The COURT: Cannot you conclude your cross-examination of the witness and then you can take that up later?

Mr. LILLICK: Yes, your Honor.

Miss PHILLIPS: I have made my objection and I will stand on my objection.

The COURT: I understand that Mr. Lillick is going to conclude his cross-examination.

Miss PHILLIPS: Let me go on and conclude my case and if counsel wants to call Captain Freyer as his own witness I have no objection. I think it

(Testimony of Frank Barrows Freyer.)

would be very helpful, but let us proceed in an orderly fashion.

The COURT: I understand he is going to do so, that he is going to proceed with his cross-examination.

Miss PHILLIPS: I have not closed my case. I have a right to close my case.

Mr. LILLICK: I have not finished my cross-examination.

The COURT: Mr. Lillick is going to finish his cross-examination.

Mr. LILLICK: I notice on the chart that has been put in evidence that each of them has times. I will read one speed of the "Silver Palm," at 8:11 13.5 knots. Those times were all taken from the testimony of the officers, were they, or were they given to you?

A. That was testimony that was given as to the speed of the "Silver Palm." My recollection is that the testimony of the engineers especially was that she was making 108 revolutions, which corresponded to 13.5 knots just prior to the vessels sighting each other. [767]

Q. Your computations on these charts were made from the testimony of the officers of the "Silver Palm," were they?

A. Yes.

Q. Do you remember that Captain Cox testified that when he first had the hull of the "Chicago" and her superstructure in full sight to come to any con-

(Testimony of Frank Barrows Freyer.)

clusion as to her course she was about 1800 yards or a mile away?

Miss PHILLIPS: Just a minute, the witness has testified that he used the exhibits of Captain Cox which are now spread out on this table.

Mr. LILLICK: Just a minute ago he said he used the testimony.

The COURT: Q. Did you use anything besides these three exhibits, or did you read the testimony?

A. I read the testimony of Captain Cox, but these exhibits were used in making these plots.

Q. In other words, in every situation depicted on these plots you assumed it on the basis of the data you found on these three exhibits, 1, 2, and 3 Cox?

A. With the exception of the speed of the "Silver Palm."

Q. Where did you get that?

A. That was taken from the testimony of the officers of the "Silver Palm."

Mr. LILLICK: May I have the question read?

The COURT: Read the question.

(Last question repeated by the reporter.)

Miss PHILLIPS: I object to it on the ground the witness has already answered that question.

Mr. LILLICK: Am I to be precluded from cross-examining the witness when he said the diagram was made from speeds taken from the testimony that he has read and formed the basis of the diagram?

(Testimony of Frank Barrows Freyer.)

Miss PHILLIPS: I beg your pardon. The distances there were Captain Cox's. I think that is self evident on the exhibits.

The COURT. The witness has testified to taking the speed from [768] the testimony and not from the exhibits just now, so I presume he can inquire about the testimony that was given, because he said that he took it from the testimony. Can you answer the question?

A. My recollection is that Captain Cox did so state in his deposition.

Mr. LILLICK: Q. Do you not remember also that Captain Cox, as to Exhibit No. 1 testified that "No. 1 is at 8:11 a.m. when I sighted what afterwards turned out to be the 'Chicago.' No. 2 is the cruiser 45 seconds later, when I determined the direction of the 'Chicago,' at the time when I gave one short blast. The first one is at the time of giving the three-blast signal. No. 3 is the angle at which the ships collided at about 8:13." Do you remember that testimony?

A. That is the gist of it. It has been some three or four months since I read it.

Q. Do you not also remember that he said the 45 seconds was an estimate of time?

A. I do not remember that specifically, but I would assume that to be the case.

Q. I read to you, Captain Freyer, from page 144 of Captain Cox's testimony, commencing at the bottom of page 143:

(Testimony of Frank Barrows Freyer.)

“Q. I hand you these sketches back, they are Nos. 1, 2, and 3, and will ask you to tell us what they are and we will then offer them in evidence.

“A. No. 1 is at 8:11 a.m., when I sighted what afterwards turned out to be the ‘Chicago.’ No. 2 is the cruiser 45 seconds later when I determined the direction of the ‘Chicago,’ at the time when I gave one short blast. The first one is at the time of giving the three-blast signal. No. 3 is the angle at which the ships collided at about 8:13.

“Q. You have spoken of an interval of 45 seconds having elapsed. Did you look at a watch or clock at that time, or is that only an estimate upon your part?

“A. It is an estimate of time, as far as I could judge, between giving the three-blast and my [769] giving the one blast, and giving the order ‘Hard a-starboard.’” That is the basis for the three diagrams of Captain Cox in connection with his testimony?

A. Yes.

Q. Captain Freyer, you have testified that in drawing your own diagram you took as correct the angles given, as I remember.

A. As given in these exhibits, 1, 2, and 3 Cox.

Q. There was a collision, in any event, so we cannot get away from the collision.

A. Yes.

Q. Now, leading up to the collision there are certain elements involved in a discussion of how it

(Testimony of Frank Barrows Freyer.)

occurred, and an angle or a bearing from a navigator is something that you would take as a comparatively accurate thing, would you not?

A. Within certain limits, of course.

Q. And as to time, where time is mentioned in deck and engine-room, time is comparatively accurate?

Miss PHILLIPS: Just a moment. I make the objection this is going beyond the limits of cross-examination.

Mr. LILLICK: I must explain the diagrams.

Miss PHILLIPS: The diagrams explain themselves. They have times on them.

Mr. LILLICK: That is why I am discussing time.

Miss PHILLIPS: The diagrams have time marked on them.

Mr. LILLICK: That is why I am discussing it.

Miss PHILLIPS: Captain Freyer said he took the diagrams and they have the distance, angles, and the time marked on them.

Mr. LILLICK: Am I to be precluded from comparing distance and time?

The COURT: Read the question.

(Last question repeated by the reporter.)

Miss PHILLIPS: I make the objection it is not proper cross-examination, I submit to your Honor. Captain Freyer said he took [770] these diagrams, which show the angle, distance and time, and charted them. Now Counsel is trying to get him to discuss what is correct.

(Testimony of Frank Barrows Freyer.)

The COURT: You arbitrarily took the times set forth on these diagrams?

A. I did.

Q. You did not try to get them from any other testimony?

A. I did not.

Q. You simply took arbitrarily the times set forth here?

A. Yes.

Q. And applied them to your plots?

A. Yes.

The COURT: I will sustain the objection.

Mr. LILLICK: Will the Court permit me a moment, and withhold your ruling?

The COURT: You may present your point.

Mr. LILLICK: My point is this, the diagrams are offered in evidence for a purpose, to show how incomprehensible the collision was, computed by the testimony of Captain Cox. If I am to be precluded from putting before the Court the reason for that, I will have to learn the rules of evidence over again, because in all of my experience I have been taught that it is proper cross-examination, where a witness has been put on as an expert, to ask him upon what he has computed this and then after that compare times, distances, and results.

The COURT: I think your statement would be correct if there was any question as to what he took as a basis of his computation. Of course, in your presentation you will try to show that the bases of the computations are erroneous, it is knocked out, but he simply has prepared these diagrams solely

(Testimony of Frank Barrows Freyer.)

and exclusively on the basis of certain data which he has arbitrarily taken, as I understand it; it may or may not be correct. You are going forward on the question as to whether the data which he assumed was incorrect. [771]

Mr. LILLICK: No, pardon me. I have not made myself clear. Captain Freyer has carried it forward to prove to your Honor that the collision was impossible by the use of these times.

The COURT: Assuming that these times are correct he has done that, but I think the question goes to show that these times are erroneous, not that his method of plotting them is erroneous. If it is not plotted right, you have a right to go into that, but as to the times, I do not think that would be proper cross-examination, because he has simply arbitrarily assumed the data from this diagram.

Mr. LILLICK: Your Honor will remember that the witness said in his direct examination that the angles or bearings were correct, and that was the reason of my question, What is the difference between the correctness of an angle and an estimate of time.

The COURT: My impression was that the witness said that it was more likely that where an angle was known that it would be more accurate than when there would be an estimate of distance on the part of someone giving him that data.

Mr. LILLICK: That alone would give me the right to cross-examine this witness as to what he meant as to a comparison of accuracy between them.

(Testimony of Frank Barrows Freyer.)

I am only striking at one thing. I am striking at this, that angles shown are correct if taken from what the witness says it is comparably, and times are correct if taken from what the witness has said comparably, and distances are impossible, and that is the reason for the whole situation, the distance covered by a vessel in a certain number of feet, and the captain is an expert and has the ability to answer. It would be impossible for us to otherwise meet a diagram of this character submitted to your Honor as a reason why this collision occurred. There is an explanation for it. [772]

**THE COURT:** My thought was that it was introduced partly to show the inaccuracy of the situation as described by Captain Cox in the data which he had contributed in connection with his deposition. He is taking Captain Cox's data and applying it to a plot apparently to show it would not show a condition that could possibly have existed at the time of the collision. I do not see where he passed on the data of Captain Cox.

**MR. LILLICK:** Because he took the record of the case with it, which I read to the witness a moment ago, in order to call to his attention that that was a basis for a part of his testimony. I have a right to use that on cross-examination.

**MISS PHILLIPS:** Counsel said a moment ago couldn't he show that. Of course he can show that. He is trying to argue the case. Counsel can show the reason why Captain Cox was mistaken or why estimates of distance could be wrong, but he is trying

(Testimony of Frank Barrows Freyer.)

to get the witness to plot these things according to these charts. As your Honor can see, here are the distances, times, and angles marked. The witness plotted them the way they were given by Cox, distance, angles, and time. On the next plot all he did was to change the distance, and the next plot all he did was to change the distance, and the next one. That is all he has done. He has taken angles and time in each case just the way that Captain Cox gave them. Now, Mr. Lillick is trying to argue with the witness whether or not Captain Cox could have made a mistake in this data or the other. I think that is not proper cross-examination.

Mr. LILLICK: Your Honor will remember that the three were followed by another diagram upon which a course of 125 degrees is laid out, that none of us had ever heard of that, at least on the side of the "Silver Palm," until a moment ago; I never heard of the course of 125. [773]

Miss PHILLIPS: The point that I make is this. Counsel has not cross-examined the witness so far on the points that the witness had testified to. Now, he may get to that point, but certainly so far, when the witness says he took these exhibits and he plotted them, it is not within the limits of cross-examination for him to ask the witness whether Captain Cox could not have made an inexcusable mistake about the time, an inexcusable mistake about the distance. All of those are proper for him to argue, but it is not proper cross-examination.

(Testimony of Frank Barrows Freyer.)

The COURT: On the fourth plot what were you endeavoring to do?

Miss PHILLIPS: That is the fifth plot.

A. The fifth plot was an endeavor to show the picture as generally testified to by the officers of the "Chicago," and then to place the position of the "Silver Palm" as related by the officers of the "Silver Palm," which shows that the courses and bearings are irreconcilable.

Q. In other words, you have not in any way desired to criticise the data but simply tried to graphically illustrate how that data would appear upon a plot of this kind?

A. Yes.

Q. In the last one you have taken the data as to the movements of the "Chicago" from the testimony of the officers of the "Chicago"?

A. The general testimony does not agree exactly as to the bearing upon which the "Silver Palm" was sighted by the officers.

Q. You are not endeavoring, as I understand it, to show any reason why any of this data might be inaccurate?

A. No, I merely have in that fifth exhibit run the "Chicago" back, and I started with a certain assumption of the heading of the "Chicago" at the point of collision, the angle of impact estimated by the witnesses of both the "Chicago" and the "Silver Palm," and moved the "Silver [774] Palm" back an estimated distance for one and three-quarters

(Testimony of Frank Barrows Freyer.)

minutes without any change of course in the "Silver Palm."

The COURT: Of course, there is this to be said, you testified to the possibility of an inaccuracy on the part of the person giving this data in distance as compared to angles. Read the last question.

(Last question repeated by the reporter.)

Mr. LILLICK: May I rephrase the question, and before doing so remind your Honor that the witness has testified that the diagram was drawn after taking into consideration not only the estimate of the distance made by Captain Cox and the diagram that he drew, but also his testimony, and that is what I wish to call the witness' attention to in preparing this diagram.

Miss PHILLIPS: Your Honor has already ruled upon this, and I think counsel is going back to what you ruled on. The diagrams there show in themselves angles, distances, and times, and Captain Freyer said he plotted those just as they were given in the diagrams, and he did say he read the testimony of Captain Cox, but he says he plotted those according to those diagrams.

The COURT: Q. As I understand it, Captain Freyer, you took the time which is indicated on each one of these diagrams as an arbitrary period between each one of these particular settings: That is correct, is it not?

A. Yes, as to these exhibits 1, 2, 3, Cox, but the last exhibit introduced had other times.

(Testimony of Frank Barrows Freyer.)

Q. Had other times to what extent?

A. This had a number of assumptions, your Honor; first the heading of the two ships at the moment of collision, the time between the positions 1 and 2, the course on which the ships were at positions 1 and 2, and the speed that the ships made between positions 1 and 2, which, of course, means the distance traveled in that time.

Q. You took that data from where?

A. With respect to the "Chicago" [775] that was taken as related by the witnesses of the "Chicago," except as to the angle that the "Silver Palm" was on the "Chicago's" port bow, which was on the other side.

Q. How did you do it?

A. It was an endeavor to bear up to an average these elements of time, given by the officers of the "Chicago," that is the time when the "Chicago" began to back until the collision was estimated by officers of the "Chicago" as between one minute and a half to two minutes. That was split to one and three-quarters.

Q. In other words, in this last one you attempted to take the story told by the officers of the "Chicago" and compare it with the story told by Captain Cox of the "Silver Palm" and make what you thought was probably the true situation?

A. No, it is only a possible situation.

Q. What you thought was the most probable situation with that data?

(Testimony of Frank Barrows Freyer.)

A. No, it was only a situation which might have occurred.

Q. The trouble is the last one covers a different field than the other.

Mr. LILLICK: I am unable to understand why my cross-examination should be limited, in an endeavor to put before the Court facts upon which the court can come to a reasonably correct solution of the problem.

Miss PHILLIPS: I think to shorten this I am going to withdraw the last exhibit. I thought it would help your Honor if you had been able to see an average of the time, distance and speed, from which your Honor could have computed variations. That is the only purpose. For instance, if you allow a different speed of the "Chicago" than nine knots your Honor could have made the computation; if you allow a different speed of the "Silver Palm" your Honor could have computed it, but if counsel objects to that I will withdraw the last exhibit.

[776]

Mr. LILLICK: I will not permit it.

Miss PHILLIPS: I will withdraw it.

Mr. LILLICK: It is offered in evidence, and I insist that it has made its mark upon the Court's mind, and that being true a withdrawal of the exhibit will leave me in the situation where unconsciously there has been a psychological effect on the Court that I have a right to controvert.

(Testimony of Frank Barrows Freyer.)

Miss PHILLIPS: I thought Counsel was objecting because the witness was assuming too much. The witness only took the testimony of other witnesses and plotted it. If counsel wants to cross-examine on what other elements he took I have no objection. I will withdraw it. I thought it would be very helpful to the Court.

The COURT: I am not entirely satisfied that is what he did. The purpose, as I understand it, was with all of the data which was available to explain a possible solution of the accident, was it not?

A. Yes, your Honor.

Q. In other words, it is kind of taking all of the elements together and then where there are inconsistencies trying to smooth them out so as to, if possible, depict what occurred upon that collision?

A. I might say in answering that, I sat as a member of the Court of Inquiry which heard the testimony given in this case, and as the testimony was developed it was difficult to understand—

Mr. LILLICK: Might I be pardoned for interrupting, it is quite objectionable.

The COURT: I want to know what this is, in fairness to you, because I presume that what the witness is saying is probably along the line that you desire to contend for. In other words, you were trying to help the Court by showing a synthetic picture [777] of what occurred in so far as possible?

A. To assist the court.

(Testimony of Frank Barrows Freyer.)

Q. And it would be persuasive to the Court that in this way in all likelihood you contend that the collision occurred?

A. No.

Q. It is not supposed to aid the Court to that extent, then. Then what value is it?

A. It was an endeavor to show a picture as related by the officers of the "Chicago" and at the same time to place the "Silver Palm" where her officers said she was, from which it will be seen that the testimony as to courses and bearings is irreconcilable.

Q. I am not thinking of that, but is it supposed to show what is a true picture of this affair?

A. I had not that intention. The intention was merely to show to your Honor that there was inconsistency in the testimony which could not be true; that if all this testimony is accepted as true that—

Q. (Interrupting) I don't know as we need to speak about that, but was not to truly depict what might have transpired?

A. No.

Q. Your belief as to whether or not you could humanly work it out, you did not even want to work that out, did you?

A. I am still wondering, your Honor, how the collision occurred.

The COURT: I don't know as that will help the Court out very much, then.

Miss PHILLIPS: May I be heard on that? I thought if your Honor took this diagram your

(Testimony of Frank Barrows Freyer.)

Honor could use it to make recomputations on all of the elements involved.

Mr. LILLICK: It seems to me that I have a right to cross-examine Captain Freyer on the diagrams that are in evidence. The last question to which I addressed myself—

The COURT: Mr. Lillick, I think on the first four plots of Miss Phillips where the witness used nothing but an arbitrary collection of data you would be in an awful position to say you could inquire as to the accuracy of that data. The only thing [778] he did was he accepted the data and plotted it to show where the vessels would be if that data was accepted. Now, when it comes to this latter plot, I don't know where I find myself, because instead of being an attempt to show the Court what actually took place, it is merely an attempt to show the Court the inconsistency of the testimony given by the Government's witnesses and the witnesses for the "Silver Palm." but it is not an attempt on the part of Captain Freyer to give a solution of what transpired at that time.

Mr. LILLICK: That is also true of the other exhibits, because they all start with the collision and work back.

Miss PHILLIPS: No, they do not.

The COURT: The others are plotted from the data given by Captain Cox.

Miss PHILLIPS: They do not start with the collision.

(Testimony of Frank Barrows Freyer.)

The COURT: As to the question along the line you are following as to certain data being more accurate than others, etc., it seems to me that is in a different field from the examination of this particular witness, and I still cannot see from the presentation that was made in the record, as far as it is made, except that one statement he made that angles are more likely to be correct, that is from the general statement, than distance—outside of that general statement I do not think there is anything in the testimony—as to this, if there is I would like to have it pointed out to me. He has taken certain data and plotted it. In what way are you contending that any of the data is not right, either the data of the witnesses of the “Chicago” or the data on the part of the “Silver Palm”?

Mr. LILLICK: May I make this suggestion to the Court? We have arrived at the adjournment hour, and by tomorrow morning it may be that the reporter will have completed the direct ex- [779] amination of Captain Freyer, and we will then be in a better position to have a ruling on it.

Miss PHILLIPS: I think your Honor stated when we started this case that if a witness was on the stand and could be completed within a short time we should complete it.

The COURT: Mr. Lillick wishes to have the privilege of going over the record—that is his statement just made—to see whether there was testimony which went farther than what I have just stated. Isn't that correct?

(Testimony of Frank Barrows Freyer.)

Mr. LILLICK: That is exactly the point.

The COURT: We will take a recess until tomorrow morning at ten o'clock.

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(An adjournment was here taken until tomorrow, Friday, March 30, 1934, at ten o'clock a. m.)

[780]

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Friday, March 30, 1934.

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FRANK BARROWS FREYER,

Cross-Examination (resumed)

Mr. LILLICK: May it please the Court, I think perhaps in the heat of yesterday afternoon it was a good idea that we took an adjournment until this morning. I withdraw the last question that I asked. I want to ask Captain Freyer only one further question.

Q. On one of the charts, Captain Freyer, you had a course laid down of 125 degrees for the "Silver Palm." You had nothing upon which to base that course in the testimony, had you?

A. None other than that might be deduced from the testimony as to the heading of the "Chicago" at the moment of collision, and the angle of impact worked back from that to place the "Silver Palm" on that course had there been no change in course.

Q. If she had been on that course?

(Testimony of Frank Barrows Freyer.)

A. If she had been on that course and there had been no change.

Mr. LILLICK: That is all.

Miss PHILLIPS: I have no further witnesses to call, your Honor, that is, in the case involving the navigational issues. I believe that the "Silver Palm" logs are not offered in evidence. Counsel could not offer them, but I think I can, so that the Court would have before it whatever records there are. May I have the logs?

Mr. LILLICK: Yes.

Miss PHILLIPS: I am now offering in evidence as Government's exhibit next in order the maneuver book or bell book—the maneuver book, I believe, is the English term for what we call a bell-book. I offer the entries on the page beginning October 23 and running through October 24, which is two pages. I think both of these pages were referred to by the officers in their [781] testimony.

The COURT: It will be received as United States Exhibit No. 27.

(The maneuver book was marked "U. S. Exhibit 27.")

Miss PHILLIPS: I will also offer in evidence the rough log of the "Silver Palm," the entries appearing on pages 183, 184 and 185, covering the dates of October 23 and October 24. I might say in that connection that I do not think the date of October 23 is particularly instructive, but I believe that that was referred to by the officers in their

(Testimony of Frank Barrows Freyer.)

testimony, and there will be no harm in having that considered by the Court.

The COURT: It will be received as United States Exhibit 28.

(The rough log was marked "U. S. Exhibit 28.")

Miss PHILLIPS: I will offer in evidence the page of the engine-room log, it is not numbered, but I think it covers from San Francisco to New Orleans, October 24, the entries for October 24.

The COURT: It will be received as U. S. Exhibit 29 in evidence.

(The log-book was marked "U. S. Exhibit 29.")

Miss PHILLIPS: We rest, your Honor.

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DAVID W. DICKIE,

Recalled for the Silver Line, Ltd., in surrebuttal.

Mr. LILLICK: Q. Mr. Dickie, have you prepared a sketch showing the respective decks of the two vessels and the water line at the time of the collision?

A. Yes.

Q. There has been so much testimony, your Honor, with respect to the water line, and where the point of contact came, that I wish to have in the record a diagram showing the respective decks of the two vessels and the water line. Will you point on the diagram [782] to the water line, Mr. Dickie?

A. This is the water line, and the right-hand

(Testimony of David W. Dickie.)

picture shows the bow of the "Silver Palm", the forecastle deck, upper deck, stringer, second deck, water-tight clear through the second deck, also back to here, and the stringer here and stringer here, and these vertical lines of the frames of the ship and appearing the way they are in the drawing. This sketch is a copy of the sketch which is already in evidence which was prepared by the Naval Constructor from Mare Island, and they are made to the same scale, and made in the relative positions.

Q. What portion of the "Chicago" does it show, a side view or a cross sectional view?

A. This is a cross section of the "Chicago," that is to say, the Naval Constructor from Mare Island described that as a cross section of the "Chicago" where he thought the place was that the accident occurred.

Q. Pointing to the compact line between the two diagrams, can you tell me whether that is intended to indicate the side of the "Chicago" or the bow of the "Chicago"?

A. That is intended to indicate the side of the "Chicago."

Q. In other words, it is like a straight cut off section of the "Chicago"?

A. Straight cut off section of the "Chicago."

Mr. LILLICK: I will offer that in evidence as Respondent's Exhibit next in order.

The COURT: It will be received as Respondent's Exhibit 25.

(The sketch was marked "Respondent's Exhibit 25.")

(Testimony of David W. Dickie.)

Mr. LILLICK: Mr. Dickie, I show you Respondent's Exhibit No. 18, which was a diagram drawn by you to indicate the "Silver Palm" looking down on her from above with the damage, and a diagram of the "Chicago" which is U. S. Exhibit 20, and ask you to put the diagram of the "Chicago" on the damaged portion as shown by Mr. Hague, who produced the diagram—I think it was Mr. Hague—and ask you to put them in the relative positions [783] as shown by the diagrams.

A. In the first place, according to my theory of how this accident took place, it is my opinion that the stem of the "Silver Palm" touched the "Chicago" at frame 12 at the start, and that the "Chicago" went ahead in the water and the "Silver Palm" went ahead in the water in such fashion until the stem of the "Silver Palm" came on the port side of the fore-and-aft heavy special tested steel supporting the handling room between the first and the second platform decks, and also a part of the stem came in contact with the port side of the fore-and-aft bulkhead, and crushed the stem of the "Silver Palm" on the lower part over to the starboard side, the damage continuing until the "Silver Palm" came up against the ammunition hoist. Then the vessels swung, due to the energy involved, until they came around to an angle of about 70 degrees or 78 degrees, somewhere along in there, that the "Silver Palm" kept on swinging to the right for about, I think the record shows, 40 or 45 degrees.

The COURT: Q. The "Chicago"?

A. The "Chicago" kept swinging to the right

(Testimony of David W. Dickie.)

I think about 40 or 45 degrees, and the "Silver Palm" kept swinging to the left for 165 degrees or almost a half circle, until she was swung around from a point in a southerly direction to a northerly direction. This accounts for all of the damage when you fit it together. There is a strong bulkhead at frame 231½, and all of this lighter plating, one-quarter-inch plating, piled up ahead of the movement of the ship, and acted as a cushion between the bulkhead 231½ and the starboard bow of the "Silver Palm," and that pushed the bow over to port.

Q. Of course, your plan this morning comes in the same line as the plan of the officer, Mr. Hague, the only difference being that you feel that this action was agumented by movement on the part of the "Chicago," and not lying at rest in the water?

A. Not ly- [784] ing at rest in the water.

Q. Now, then, in what way do you feel is shown the nature of the contact, we will say, what convinces you that there was a movement on the part of the "Chicago" in addition to that angular movement which came in on that direction, using that angle as testified to by you and by Officer Hague?

A. Supposing we assumed Mr. Hague's position, that the "Silver Palm" struck frame 17 and went straight in along that angle and that the "Chicago" was standing still, the stem of the "Silver Palm" would have come on the forward side of the bulkhead 2, this is an armored bulkhead, and this part of the "Silver Palm" which is now crushed over to

(Testimony of David W. Dickie.)

starboard by this bulkhead, instead of being crushed that way would have been crushed over to port by the athwartship bulkheads; in other words, this stem, instead of coming on this side of this bulkhead and being bent this way, would have been bent in the other direction, due to the action on this bulkhead, here.

Q. Only a difference between moving up this way and the angular movement?

A. No, I am holding the "Chicago" still and I am moving the "Silver Palm" straight along this line. It is an impossibility for the "Silver Palm" to swing that distance. Let me give you the exact distance. It would be an impossibility for the bow of the "Silver Palm" to swing 26 feet to starboard in that time because this accident was over in three or four seconds. You see, the "Silver Palm" was going ahead a certain speed per second when it came up against the side.

Q. I was figuring this way, it is true that he drew that arrow, but he afterwards struck it out.

A. I took it to strike this way.

Q. In the way you held it it struck there?

A. No, I was holding it that way on top of the center line of the "Silver Palm." [785]

Q. Your idea is that the very point of the stem struck the "Chicago"?

A. The very point of the stem struck the "Chicago," the edge of the deck of the "Chicago" at frame 12.

(Testimony of David W. Dickie.)

Mr. LILLICK: May I show you that photograph?

A. Which is at this point which I am marking with an "A" where the man is standing.

Q. Government's Exhibit what?

A. Government's Exhibit 2-D, that the stem of the "Silver Palm" struck at the point A alongside of where the man is standing. If we take it the other way and fit the "Silver Palm" where it belongs in the picture, which both the naval constructor and myself agreed was the final resting place of the ships, the area which I am marking with cross hatching on the drawing would be totally without any explanation of how the accident occurred, because the "Silver Palm" would damage this part marked with a red pencil.

Miss PHILLIPS: I think that is very confusing for the witness to mark it with red pencil, an exhibit which Captain Hague prepared with red marks meaning very specific things. It is going to be very confusing if the witness marks this exhibit with his own marking.

A. I will mark that in brown. If we move it and put the "Chicago" back on the point where the naval constructor put it, then for the "Silver Palm" to fit in the damage on the "Chicago," it would have to move in a transverse direction of  $16\frac{1}{2}$  or 17 feet. That should swing by actual tests three feet in five seconds. Now to swing 16 feet would take 26 seconds, and the collision in a fore-and-aft direction was all over in three or four seconds, because

the "Silver Palm" was going at 15 feet per second at the moment of collision, so that it is impossible to explain the collision on that theory; whereas it is quite simple to explain it if you put the "Silver Palm," the stem of the "Silver Palm" at the forward end [786] of the cut and let the "Chicago" come forward at the same time that the "Silver Palm" is going along, then the whole story fits in; the stem of the "Silver Palm" comes against the outboard side of the armored turret and you can account for every bit of damage shown in the photograph.

The COURT: Q. The only thing is, I can see where the movement might be augmented by two forces going in that direction, but you would not have the same result if the force was in that direction and still do that.

A. It would have exactly the same result if the "Silver Palm" had been moving this way, and from the fact that the "Silver Palm" has to come 16 feet, it would have to take 26 seconds of time to cover that space where there is only three or four seconds available.

Q. But you are assuming turning this way and I am assuming that the movement that it tore right through here.

A. Very well.

Q. In other words, you are assuming a movement like this?

A. Correct.

(Testimony of David W. Dickie.)

Q. I am assuming a movement like that.

A. Very well, if you assume a movement like that, putting the damage together, the line of the "Silver Palm" would follow along the line W-X, and the "Silver Palm" would be as marked "Second Deck" and the place between the port side of the "Silver Palm" and the line of cut of the "Chicago," there would be no force present to cause the damage.

Q. Are you assuming that the entry is here, or are you assuming that the entry is here?

A. No. In order to complete the damage the stem must fit into the place where the damage was, and unless we complete the damage that way we must have a situation at the center line of the "Silver Palm" so that the damage can be accounted for; and by placing the center line of the "Silver Palm" along the line W-X, the damage can be accounted for, [787] but the damage to the port side of the "Silver Palm," between the port side of the "Silver Palm" and the damage line on the deck of the "Chicago," is not accounted for by that, because this part of the "Chicago" would not have been injured at all.

Mr. LILLICK: Q. On United States Exhibit No. 2-D, take the portion of the port side of the "Chicago" from A to B.

A. The portion of the port side of the "Chicago" from A to B would have been undamaged under the theory that the "Silver Palm" went in along the line W-X.

(Testimony of David W. Dickie.)

Q. You mean if the "Chicago" had been at rest?

A. If the "Chicago" had been at rest.

The COURT: Q. Irrespective, in your opinion, of what angle of impact there existed?

A. No, the angle of impact existing must conform to the damage on both ships.

Q. Your point is this could not have been produced by any angle of impact whereby this could be accounted for, in your opinion?

A. No, there is no angle of impact that will produce the damage that occurred on the starboard side of the "Silver Palm" and on the port side of the "Chicago" forward of the "Silver Palm" at the same time. You can make one set of facts that will produce the damage to the forward end of the cut in the "Chicago" and you can make another set of facts that will produce the damage to the "Silver Palm"—to the forward end of the cut on the "Chicago," and you can make one set of facts that will produce the damage to the "Silver Palm," but the only condition that will account for both sets of damage is the condition whereby the "Silver Palm's" stem starts at Frame 12 on the "Chicago" and the "Chicago" goes ahead sufficiently to permit the "Silver Palm" to create the damage at the after end of the cut.

Mr. LILLICK: Of course, your Honor has not had the benefit of the testimony of the "Silver Palm." [788]

The COURT: I have read none of that.

Mr. LILLICK: So it is very difficult to understand.

(Testimony of David W. Dickie.)

Q. In connection with the question just propounded to you by the Court, I show you another diagram and ask you to relate that to the questions propounded to you by the Court.

A. This diagram merely illustrates the area which would be unaffected by collision whereby the center line of the "Silver Palm" is properly placed to create the damage to the after part of the "Chicago" and the bow of the "Silver Palm." This diagram merely illustrates what I was saying about W-X.

Q. If the "Chicago" had not been going through the water in a forward direction at the point of impact, what would have been the situation with respect to the shaded portion of this diagram?

A. The part of the "Chicago" represented by the shaded part of the diagram would not have been injured to that extent.

The COURT: Have you estimated the speed the "Chicago" must have had to have caused within the period that an accident of this kind, a penetration of this kind, could happen, that it could finally reach a point of rest in there? It is a matter of very brief time. Have you estimated that, as to what you believe?

A. We have that all worked out on the next diagram that is going in evidence.

Q. I did not know you had that. In other words, I would like to get what you estimate as the period that elapsed between the movement of the ship to the point where she came to rest from where you think she started to hit the side.

(Testimony of David W. Dickie.)

A. The "Chicago" came ahead about 30 or 32½ feet, somewhere in the neighborhood of four seconds. That would be about 8 feet per second.

Mr. LILLICK: Q. Can you translate that into knots per hour?

The COURT: In what period was that?

A. 32 feet in 40 [789] seconds, that is 8 feet per second. About 4.8 knots per hour.

Mr. LILLICK: We offer this last drawing as our next exhibit.

The COURT: It will be received as Respondent's Exhibit 26.

(The sketch was marked Respondent's Exhibit 26.)

Mr. LILLICK: Q. Mr. Dickie, have you prepared a diagram with the courses of the respective vessels and the bearings of the "Albion Star" and the times shown by the testimony with respect to the relative positions of the vessels as they approached each other and came into contact?

A. Yes.

Q. I hand you a diagram which you have prepared and ask you to explain it to the Court.

A. This is a diagram showing the position of the three vessels. The "Albion Star" was out to the starboard, and from the testimony of the "Albion Star" officer who gave his bearings on the "Chicago," and who gave his bearings on the "Silver Palm"—

The COURT: Q. Whose testimony is that?

A. The captain of the "Albion Star"; and he

(Testimony of David W. Dickie.)

gave his bearing of the "Silver Palm"; he likewise gave his true course as 335 degrees true, and gave his speed as 6 knots per hour during this interval.

Mr. LILLICK: Pardon me a moment. I would like to explain to the Court that the depositions of the officers of the "Albion Star" were taken and they, too, have not been read by the Court.

The COURT: No, that is the reason I asked, merely to have him refer to what testimony you took, and then, of course, it will be easy to find when the depositions are read.

A. The red figures on the drawing begin with zero and up to 120 seconds are numbered from the moment of impact of each ship, the "Silver Palm" from the moment of impact, from zero to 120 seconds, and the "Chicago" zero up to 120 seconds. This drawing was likewise made by taking the bearings which the "Silver Palm" had of the "Albion Star" and relating those bearings together and the [790] distance between them is given as a quarter of a mile somewhere in the record; I do not remember who testified to that. The plot of the "Silver Palm" is right along the line, to start with, of 160 degrees true, and the plot of the "Chicago" at the start is also along a line of 350 degrees true. The plot of the "Silver Palm" is taken from the tests that were made of the "Silver Palm" and have no mathematics in them whatsoever; that is the actual fact corrected to the displacement of the ship. 168 degrees is the angle which Captain Cox, of the "Silver Palm," testified to as being his angle at the

(Testimony of David W. Dickie.)

moment of impact. He afterwards swung around 165 degrees toward the left, from a southerly heading, through the east, and around to the north. The "Chicago" angle at the moment of impact is determined by the first mate, I think it is, of the "Albion Star," who took the bearing of the "Chicago" at the moment of impact, and said that the masts of the "Chicago" were in line; so that the angle 22 degrees true came from the testimony of the witnesses on the "Albion Star." The curve of the "Chicago," the steering curve, was taken from the tactical turning circle that was introduced in evidence, and the other curve from zero back to the 350 degree line was taken from the proper tactical turning circle for that part of the curve. The numbers in black, 10, 20, 30, 40 and 50 and 60 seconds, and the feet up to 1125 are taken from the tactical data of the "Louisville," which was introduced in evidence, and I think it was Admiral Simons said that you could put it on top of the tactical data of the "Chicago" and that it would fit absolutely.

Miss PHILLIPS: Might I interrupt just a moment? You are speaking about tactical data. I think we had better refer to the exhibits. Tactical data is rather a vague term. I think it would add very much to the witness' explanation. [791]

A. The turning circles that are used were taken from Government's Exhibit No. 4, and the distance in feet and seconds were taken from Government's Exhibit No. 5. Repeating, the numbers from zero marked on the drawing, where the "Chicago" went

(Testimony of David W. Dickie.)

emergency reverse, are given up to 60 seconds, and the corresponding feet from zero up to 1125 feet were taken from Government's Exhibit No. 5. The particular figures that I paid most attention to are the full speed astern to ship dead in the water 475 yards, estimated time 1 minute 55 seconds. I plotted a curve using these two figures and made a table to give me the speed in between.

Miss PHILLIPS: Just a minute. Counsel is now offering something in evidence that is not rebuttal. I offered a plot of the "Louisville" curve, which was put in week before last, in order to aid the Court. I am going to ask counsel to direct attention to what part of the testimony of Lieut. Hague, Professor Woods, or Captain Freyer the testimony of the last witness, in regard to the plot that he made, to which point is this testimony offered?

Mr. LILLICK: This is in rebuttal of the entire case made out by the Government in rebuttal of our case.

Miss PHILLIPS: Now, I am going to be very specific about this. This witness is now at this late date offering a plot of the "Louisville" curve. He did not say how he plotted it, I don't know whether it is by estimate or what. I deliberately did not offer evidence in my rebuttal the other day, because I did not think I was entitled to offer a plot by calculus of the "Louisville" curve which I had, because counsel had not raised that issue. They are offering at this time on surrebuttal something that I did not take up on rebuttal.

(Testimony of David W. Dickie.)

Mr. LILLICK: We will withdraw this then entirely, Miss Phillips. The chart itself, is based upon the testimony, and this was a part of the testimony before the court, except for this [792] point you are now making, as to the "Louisville" tactical data. I am a little uncertain about that, but let me withdraw it. Go ahead without reference to that, Mr. Dickie.

A. Then we plotted the times and the distance from this zero point back along the line until we come to this point 120 seconds from the point of collision. I then took the angle between the "Chicago" and the "Silver Palm" and the course in looking over the port bow of the "Chicago" is about 8 degrees, or about three-quarters of a point, and the course looking over the starboard bow of the "Silver Palm" is about 6 degrees, or about one-half a point. The only way I could account for the two-point bearing which the "Chicago" took over her port bow is from the testimony of Admiral Simons, I think, in which he said that the "Chicago" on occasions yawed from one side to the other, and her course had to be corrected to have her stay on her course of 350 degrees. That is the only explanation that I can make of the 2 point bearing is that the 2 point bearing was taken at some moment when the "Chicago" had yawed from the course that she was on and the simultaneous course taken from the compass was not observed at the same time. The distance between the ships now checks up just about as the testimony in the record.

(Testimony of David W. Dickie.)

The COURT: Q. Within that last minute, then, according to your drawing, the "Chicago" brought herself into jeopardy by turning to starboard?

A. Yes.

Q. Had she maintained her course she would not have struck the "Silver Palm"?

A. No, certainly not.

Q. In other words, the error, if there was any, was in the turn in the last minute?

A. Yes.

Q. In other words, it occurred within the last half minute?

A. Within the last minute. The "Silver Palm" started to swing—the "Chicago" started to swing at the point marked Zero, and the [793] record shows that the captain of the "Silver Palm" turned to his starboard the moment he observed the "Chicago" turning to her starboard.

Q. To port?

A. Turning to her starboard.

Q. This movement began about ten seconds—

A. (Interrupting) If you put a straight line on the other side of the center line you can see that the movement began right at this point, the zero point, where the "Chicago" emergency reverse was given.

Q. At that time there was not any possible danger of the two ships coming in contact?

(Testimony of David W. Dickie.)

A. No. The "Silver Palm" was up at the 72 seconds and was heading on course 156 true.

Mr. LILLICK: We offer this as our next exhibit.

Miss PHILLIPS: I am going to make an objection to the offer of this exhibit in evidence on the theory that it does not conform to the testimony, of either the witnesses of the "Chicago" or of the witnesses of the "Silver Palm," or of the witnesses of the "Albion Star." In other words, I think the record is going to show this exhibit is purely theoretical, showing what the ships might have done had they observed other maneuvers than they did observe, and had the witnesses testified other than they did testify. However, your Honor can reserve a ruling and have the exhibit properly numbered and we can talk about this in the argument.

Mr. LILLICK: I would rather have it decided now.

The COURT: It will be received as Respondent's Exhibit 27.

Mr. LILLICK: That is all.

#### Cross Examination

Miss PHILLIPS: Q. Now, referring to Exhibit 27, did you take the first position of the "Chicago" and the first position of the "Silver Palm," the respective positions of the two ships at the moment of sighting?

A. No. [794]

Q. What are they then?

(Testimony of David W. Dickie.)

A. Here is——

Q. You answer the question I put.

A. I answered it, no.

Q. Then what position are you taking? I am asking now of the position you marked as “Silver Palm,” first position, and the first position of the “Chicago,” at what point of time did you take that position?

A. The position of the “Silver Palm” is 120 seconds before the collision, and the position of the “Silver Palm” 120 seconds before the collision is the position of the “Silver Palm” when she sighted the “Chicago.”

Q. All right. Now, then, what are you taking as the first position of the “Chicago”?

A. The first position of the “Chicago” is 160 seconds before the collision, and is the position of the “Chicago” coming up on a course of 350 degrees true.

Q. That is your first position of the “Chicago”.

A. One moment, until I finish.

Q. That is before the “Silver Palm” sighted her, is that right?

Mr. LILLICK: If the witness has not completed his answer I suggest that he be allowed to.

Miss PHILLIPS: The trouble is he is not answering the questions I put to him. Go ahead.

A. When the “Silver Palm” sighted the “Chicago” the “Chicago” was at the position marked 120 seconds in red. When the “Chicago” came ahead to the position marked 72 seconds, the “Chi-

(Testimony of David W. Dickie.)

icago" sighted the "Silver Palm," and the corresponding position of the "Silver Palm" is shown on her course at 72 seconds.

Q. Then you have the "Chicago" traveling what distance between the time the "Silver Palm" sighted her and the moment of the collision? What distance are you having the "Chicago" cover?

A. 1365 feet.

Q. At the moment that the "Chicago" sighted the "Silver Palm," according to your exhibit, from which bow should the officers of the "Chicago" see the "Silver Palm"?

A. It should have been [795] from the starboard bow.

Q. From their own starboard bow?

A. Correct.

Q. Instead of the port bow?

A. Yes.

Q. As Admiral Laning, Admiral Simons, Captain Kays, Lieut.-Commander Minter, Lieut.-Commander Gray and the various lookouts sighted her: Is that correct?

A. That is correct.

Q. They are all wrong?

A. Wait a minute——

Q. You have already given your explanation.

A. The explanation of that is that Admiral Simons said the "Chicago" yaws in her movement through the water, and that is the only way that I can explain that they saw the "Silver Palm" over the port bow instead of the starboard bow.

Q. What does the term "yawing" mean?

(Testimony of David W. Dickie.)

A. It is movement of the vessel on her pivoting point from right to left as she proceeds through the water.

Q. Is there anything unusual in a vessel yawing as she proceeds?

A. On these high speed vessels they all do that.

Q. Is there anything unusual in a merchant vessel yawing?

A. Quite unusual in a steamer, because they have such a large fore and aft surface.

Q. Let us proceed to the next point, when the "Silver Palm," according to your exhibit, was at the point you have marked "Bow Silver Palm," when the "Chicago" first sighted her which side of the "Chicago" should the captain of the "Silver Palm" have seen at that moment?

A. He should have seen the starboard side of the "Chicago." I understand his testimony is to that effect.

Q. No, his testimony is the direct reverse, that he never at any time saw the starboard side of the "Chicago." That is one of the exact points I had in mind.

The COURT: That is argumentative.

Miss PHILLIPS: Yes, that is argumentative.

The captain [796] of the "Silver Palm testified, as your Honor will find, that he never at any moment saw the starboard side and that is one reason the court should reserve a ruling on this.

(Testimony of David W. Dickie.)

Mr. LILLICK: I do not want to leave their statement unchallenged, though I may be in error, after the "Chicago" had turned on the hard left rudder my recollection is that he said that the masts were out of line.

The COURT: This is argumentative.

Miss PHILLIPS: I make the objection on the ground I stated.

Q. From the time the "Chicago," on your diagram, sighted the "Silver Palm," what amount of time elapsed between that moment of sighting and the collision time, the time the "Chicago" sighted the "Silver Palm" and the time they hit, how many seconds?

A. 72 seconds.

Q. And during that 72 seconds the "Chicago" traveled at what rate of speed? You have it there in feet, or have you not?

A. An average speed of 11.2 knots, over the whole time.

Q. Over the whole time?

A. Yes.

Q. That is, in one minute and twelve seconds you were having her cover how many yards?

A. 1365 feet.

Q. 1365 feet?

A. Yes.

Q. At an average speed of 11.2 knots?

A. Yes.

Q. You are having her have what rate of speed at the moment of collision?

A. I think it was 4.7.

(Testimony of David W. Dickie.)

The COURT: He has already testified 4.8.

A. 4.8 came from the other diagram, but I think this is 4.7.

Miss PHILLIPS: Q. In order to achieve that average of 11.2 knots the "Chicago" at the moment of sighting had to have what rate of speed?

A. 12 knots.

Q. Are you sure about your figures on that? I do not mean to put you to a test in mental arithmetic, you understand. [797]

A. That is not a straight line, that is the curve that the "Chicago" comes down on. I know the admiral testified it was a straight line, but I do not believe that.

Q. No, he did not testify to any such thing.

A. I think he did.

The COURT: Let us not have any discussion.

Miss PHILLIPS: The trouble with the witness is he is interpolating his estimates of witness' testimony. You are having the "Chicago" cover 1365 feet between the moment she sighted the "Silver Palm" and when the collision occurred 1 minute and 12 seconds later, the "Chicago" traveling at very nearly 5 knots at the moment of collision: Is that correct?

A. That is correct.

Q. And in order to have that occur, according to your plot, the master of the "Silver Palm" would see the "Chicago's" starboard side between the point marked 72 on your diagram and as the "Chicago" moved along up to the time she turned right in order to get in the way of a collision: Is that right?

(Testimony of David W. Dickie.)

A. He would see the masts of the "Chicago" closing together for about 20 seconds.

Q. He could see the starboard side, is that right?

A. Yes, if he could see it at all.

Q. If he saw the ship he could see the side, couldn't he, if he saw the masts, couldn't he see the side?

A. He might have, but he said it was foggy.

Q. What distance are you having the "Silver Palm" cover between the moment of sighting 120 seconds before the collision and the collision?

A. 1781 feet.

Q. And you are giving her what rate of speed at the time of sighting?

A.  $13\frac{1}{2}$  knots.

Q. You are giving her what rate of speed at the moment of collision?

A. I gave that in my testimony yesterday, I don't remember. [798]

Q. It was  $7\frac{3}{4}$  to  $8\frac{3}{4}$ , roughly?

A. Yes, that is the figure.

Miss PHILLIPS: No further cross-examination, your Honor. The objection that I have made, I will ask your Honor to reserve the ruling until your Honor has had an opportunity to read the testimony of the various officers that the witness has testified to.

Mr. LILLICK: I think the record will show that it was based on the figures given in the testimony, and I am willing to have it submitted.

(Testimony of David W. Dickie.)

We rest, your Honor. Mr. Sawyer is here to present his case at this time.

Mr. SAWYER: If your Honor please, I have here copies of two bills of lading issued by the Silver Line, Ltd., covering the cargo of the two claimants for whom I appear, and in whose names a libel was filed against the United States. I served notice to produce the original on Mr. Lillick, and he has told me he has not got the originals, but I think there is no doubt that these are true copies.

Mr. LILLICK: I am willing to stipulate that the copies presented by Mr. Sawyer are true and correct copies of the original bills of lading.

Mr. SAWYER: And the Government, also?

Miss PHILLIPS: Yes, I have no objection to the introduction of copies.

The COURT: They will be received as Respondent's Exhibits 28 and 29.

(The bills of lading were marked, respectively, Respondent's Exhibits 28 and 29.)

Mr. SAWYER: I would like to make a statement with regard to these exhibits after they are marked. Both bills of lading show that the shipper was J. J. Moore & Company, Inc., of this [799] city, and both bills of lading are to the order of the shipper, with a notation to notify Messrs. Hillman Bros., in one case, and Messrs. Hayward, Young & Co., Ltd., in the other case. This being a court action against the Government, of course it is incumbent upon us to establish not an interest in the bill

(Testimony of David W. Dickie.)

of lading but actual ownership of the goods at the time of damage. We must also prove the passing of title from J. J. Moore & Co. to the libelants at or before the ship sailed. That proof can be supplied, and is formal in character, and Mr. Blair, of Moore & Company, will testify at any time that is convenient. I must go still further than that and show that these claimants are actual South African Corporations, organized under the laws of South Africa, and then further I have got to establish that there is reciprocity, that under similar circumstances the United States could sue a public vessel of South Africa, that is one of the elements of the Public Vessels Act. All of that proof, as I say, is formal in character. Miss Phillips and I are engaged in correspondence at the present time, through the medium of the State Department, to see if we can get the evidence which we know exists. I shall have to get certified copies, I presume, from proper authorities in South Africa to show the corporate character of the two corporations. I will have to put Mr. Blair on the stand to prove the passage of the title. All of these matters being purely formal I thought it was unnecessary to incumber this record. I understand depositions are going to be taken in England, and at any convenient time that testimony can be taken either before the Commissioner, if there is a reference, or, if there is no referenc, it can be taken in court.

Miss PHILLIPS: I think Mr. Sawyer's suggestion is an excellent one. I see no reason why he

(Testimony of David W. Dickie.)

should be obliged to put in at this time either evidence of ownership, evidence of corporate [800] identity, or evidence showing reciprocal rights of United States citizens to sue the Government of South Africa. It seems to me we can reach an agreement and save the Court's time. I think Mr. Sawyer is wrong in saying that depositions are coming from England in this case. The navigational case is now finished. Both sides have rested.

Mr. LILLICK: But the limitation case is not finished. We have not started that yet.

Miss PHILLIPS: I have no more evidence to offer on the navigational case. Mr. Sawyer's case on the navigational features depends on all of the evidence taken before your Honor. It is formal proof, and I will stipulate he may present it before the Commissioner at such convenient time as he desires.

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TESTIMONY CLOSED.

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Filed June 19, 1934. [801]

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CHARLES ROBERT DEMER

called for the United States, sworn:

(Taken before Mattie G. Sterling, Notary Public, San Francisco, Calif., pursuant to stipulation of counsel.)

(Deposition of Charles Robert Demer.)

Miss PHILLIPS: What is your full name?

A. Charles Robert Deemer.

Q. What is your occupation?

A. I am a quartermaster third class, United States Navy, the "Chicago."

Q. To what ship are you attached, if any?

A. The U.S.S. "Chicago."

Q. How long have you been attached to the "Chicago"?

A. Since December 2, 1932.

Q. Do you remember the day of the collision between the "Chicago" and the "Silver Palm"?

A. Yes.

Q. Will you state whether at any time during that day you made a comparison of the clocks in the engine room with any other clock or time piece?

A. I did.

Q. Let us find out first, did anybody tell you to make that comparison?

A. They did.

Q. Who told you to make the comparison?

A. As I recall it was the quartermaster of the watch who got his instructions from the navigator.

Q. About what time so far as you recollect, did you make the comparison?

A. I could not say the exact time but I imagine it was between nine and ten o'clock.

Q. Tell us what you did.

A. The quartermaster gave me a comparing watch that had the correct time and I went down

(Deposition of Charles Robert Demer.)

and checked all the clocks in the engine room by that.

Q. A comparing watch you say. What do you mean by that?

A. That is just a watch that they have that gives the correct time of the chronometer, a watch set with the correct time from the ship's chronometer, and you carry the watch around and check the clocks.

Q. Did you go down in the engine room?

A. Yes. [802]

Q. What clocks, if any, did you compare with the time piece in your hand?

A. The two clocks in the forward engine room, one in the dynamo platform and two clocks in the after engine room.

Q. Then what did you do?

A. As I compared them I wrote down just how much each one was off with the correct time and put it on a piece of paper and took it up and turned it over to the assistant navigator.

Q. Did you keep that paper yourself?

A. No, I turned it over to the assistant navigator.

Miss PHILLIPS: That is all.

#### Cross Examination

Mr. LILLICK: Q. When did you get the order to compare the clocks?

A. I don't know the exact time, I imagine it was between nine and ten o'clock, it was quite a while after the collision.

(Deposition of Charles Robert Demer.)

Q. It was after the collision, in any event?

A. It was.

Q. Do you remember the name of the assistant navigator to whom you turned over the slip of paper upon which you had made the comparison?

A. Ensign Mallory.

Q. Do you remember whether, when you compared the clocks, they were all synchronized with the watch that you had, or whether there was a variation in the time?

A. There was a slight variation, some were a little slow and some were a little fast.

Q. By "a little" will you tell me what you mean?

A. Under a minute.

Q. Under a minute?

A. Yes.

Q. Do you know whether, when your watch was corrected or compared with the ship's chronometer, it was slow or fast for that zone?

A. No, the chronometer was set at Greenwich time.

Q. So that the chronometer from which your time on the watch was taken, was Greenwich time?

A. We have to apply corrections to it in order to get the correct time. [803]

Mr. LILLICK: That is all.

Miss PHILLIPS: That is all. [804]

## LLOYD ROBERT GRAY,

called for the United States, sworn:

Miss PHILLIPS: Q. What is your occupation, Mr. Gray?

A. Lieutenant Commander of the United States Navy.

Q. How long have you been in the Navy?

A. About 26 years.

Q. Does that include your time in school?

A. It does.

Q. Are you a graduate of Annapolis?

A. I am.

Q. Are you attached to any ship?

A. I am attached to the "Chicago" as navigator.

Q. When did you join the "Chicago"?

A. September 12 or 18, I don't recall which.

Q. What year?

A. 1933.

Q. Will you please state the duties of the navigator?

A. As navigator I am responsible to the captain and under his direction for the safe navigation of the ship, for the steering gear, the steering equipment, compasses, chronometer, and all other navigational equipment.

Q. Did you see the collision?

A. I did.

Q. Where were you at the time?

A. I was in the pilot house standing next to the captain.

Q. On which side of the pilot house was that?

(Deposition of Lloyd Robert Gray.)

A. The port side of the pilot house looking out one of the two windows in the forward part of the pilot house, on the right hand of the captain.

Q. Mr. Gray, do you know on what course the "Chicago" was at 8 o'clock on the morning of the collision?

A. We were on course 350 true.

Q. How do you know the "Chicago" was on course 350 degrees true?

A. Well I took that course myself at the direction of the captain and I checked up the course being steered by observing the gyroscope repeaters on the bridge.

Q. What compasses did the "Chicago" have that morning, what kind [805] of compasses?

A. The "Chicago" has two gyroscopic compasses, one forward and one aft in the lower part of the ship, down in the bottom, and the gyroscopic repeaters are on the bridge and other places, there being two of them in the pilot house. In addition to that there is a magnetic steering compass which is in the pilot house, and a standard compass which is also a magnetic compass, above and abaft the pilot house.

Q. I wish you would explain to us more about the magnetic compass, the standard compass, the gyroscopic compass and the rest of them.

A. A gyroscopic compass is a mechanical instrument that depends on its directive force from the gyroscope which is a high speed wheel and whenever that wheel is off of the meridian it processes

(Deposition of Lloyd Robert Gray.)

back to the meridian, and in that manner maintains its direction in a true north. We have two such compasses on board.

The standard compass and the steering compass are both magnetic compasses. They depend upon their directive to the attraction of one end of the magnet of the compass toward the north magnetic pole. These two compasses are located, one in the pilot house for the use of the steersman when he is steering the ship, if such a compass is being used, and the standard compass which is also a magnetic compass is located in a position which is as free from magnetic material, such as steel or iron, as we can have it, and that location is above and abaft the pilot house. There is no steel in that, within I think it is ten or fifteen feet of the radius of that compass. That is the general practice.

Q. Mr. Gray, have you prepared a sketch of the bridge of the pilot house and chart house of the "Chicago"?

A. I had two sketches prepared under my direction.

Q. Is this one that I now show you?

A. Yes, that is the one of the navigation bridge.

Q. On what scale is this sketch prepared, I mean how many inches [806] to the foot or fraction of inches to the foot?

A. That is the one of the navigating bridge I believe you have?

Q. Yes, I am showing you what purports to be a sketch of the navigating bridge.

(Deposition of Lloyd Robert Gray.)

A. The scale is three-quarters of an inch to the foot.

Q. Does this plot show in it the location of the steering wheel, the gyro repeaters and the like?

A. Yes, there is the steering wheel itself, the steering compass, that is the magnetic compass, steering compass.

Q. May the record show the witness has just written on the binnacle the words in pencil "Steering compass"?

A. The binnacle is not a compass; the binnacle is merely a holder for the compass.

Q. The position of the steering wheel and the rudder angle indicator and the steering wheel, have been indicated. Mr. Gray, have you any opinion upon the condition of the "Chicago's" gyro compasses that morning whether they were accurate or inaccurate?

A. Yes, I have a very decided opinion.

Q. What is your opinion as to their accuracy?

A. From my experience in the past and on the "Chicago" I know that a gyroscopic compass is quite accurate, and it is accurate on account of its mechanical means of indicating your course and also due to the fact that the directive force is so much stronger than that of a magnetic compass—the magnetic compass on board ships, particularly naval ships where we have a vast amount of steel, is very much diminished due to its reaction and as a result it does not seek its direction very well. The gyroscopic compass is used almost to the ex-

(Deposition of Lloyd Robert Gray.)

clusion of the magnetic compasses, due to the fact that they are accurate. I arrive at the fact that I consider them accurate because we have two separate and distinct gyroscopic compasses that are entirely independent of one another which read consistently the same; in other words, if we put the ship on any one course, both of those [807] compasses have read consistently alike.

Q. Now, with respect to your testimony to the conditions obtaining on the morning of October 24, did the gyro compasses read together or did they not prior to the collision?

A. They did.

Q. Have you any other reason for thinking that those compasses were correct?

A. On that particular morning and during the night before we had been proceeding up the coast from San Pedro on a series of courses in a fog, and the navigational information that I had which was received from a great many compass bearings and soundings, checked on our dead reckoning course reasonably true, reasonably accurate.

Q. Were there any other vessels operating in company with you during the 24 hours proceeding on October 24, the morning of October 24?

A. There were three other cruisers operating with us, and steaming astern of us, as we were coming up the coast.

Q. Do you know what the instructions were to the vessels astern of you as to courses to be pursued?

(Deposition of Lloyd Robert Gray.)

A. When the flag officer in command of the division establishes or sets a course, that course is given to the other ships of the formation, and should they note that by trailing us, which they did, that their track does not coincide with our, and that their ships' heading positions do not coincide with ours, then it is the duty of the ships astern to make it known that there is a possible error.

Q. Did you receive any such report from the ships astern of you during the 24 hours preceding 8 o'clock of the morning of October 24, that there was an error in the "Chicago's" compasses?

A. We did not.

Q. Did you at any time take any bearing by range finder during the 24 hours preceding the collision?

A. No.

Q. When did you leave San Pedro?

A. As I recall it, 9 a.m. on the morning of October 22. [808]

Q. On the 22nd?

A. The collision was on the day after we left.

Q. The collision was on the 24th?

A. That would place it on the 23rd then.

Q. Did you take any ranges or bearings during the 24 hours preceding the collision?

A. After departure from San Pedro the only navigational fixes which we were able to obtain were on passing Anacapa Island, Anacapa light, which was in sight, and from which we fixed our position.

(Deposition of Lloyd Robert Gray.)

Q. Did that fix indicate any error in the ship's gyro compass?

A. No.

Q. Did you take any navigational fix leaving port on the morning of October 23 at 9 o'clock?

A. We always do that, yes.

Q. Where from?

A. Well, as we passed buoys going out.

Q. Going out from what port?

A. Going out from San Pedro and Long Beach.

Q. Did you make any check of your compasses at that time?

A. I did. It is customary when we leave port to obtain our compass error, and we do that by taking an azimuth of the sun, if the sun is visible, and if not, by taking bearings of known ranges, and I took bearings on known ranges while leaving Long Beach and San Pedro Areas, to determine compass error and found none.

Q. And found none?

A. No.

Q. You say then at 8 o'clock the "Chicago" was on a course 350 degrees true. Was there any change of course made after 8 o'clock?

A. A few minutes after 8 o'clock we changed course to 330, 20 degrees to the left.

Q. Did you again observe the compass at about that time?

A. No.

Q. You say a change of course was ordered?

A. Yes.

(Deposition of Lloyd Robert Gray.)

Q. Will you please state the circumstances under which the change of course was ordered?

A. At about 8 o'clock a whistle signal [809] was reported ahead and the captain and myself proceeded to the pilot house from the chart house, and stood at one of the open pilot house windows listening. This whistle signal was on the starboard bow about one or two points, and we were approaching that signal, and the engines were signaled stop, and during the interval that the engines were stopped and the ship was forging ahead due to her momentum, a ship was observed on our starboard bow proceeding in approximately the same direction, or maybe a few degrees to the left of that. When it was seen that the ship on our starboard hand was more or less in our track, the captain ordered a change of 20 degrees to the left, from 350 to 330. Those were the circumstances of that change. It was in order to avoid that ship.

Q. Did you remain in the pilot house at that time, or did you go back to the chart house?

A. I remained in the pilot house from that point on for some time.

Q. Will you proceed to narrate and tell us what happened following the sighting of the steamer you have referred to, and an ordering of a change of course?

A. After we sighted the steamer and ordered the change of course, the captain ordered ahead two-thirds, which was followed by the order ahead standard speed. The ship was then swinging to the left in

(Deposition of Lloyd Robert Gray.)

order to clear the steamer, and I observed that this steamer, which I understand later to have been the "Albion Star" turned to the right as if to get out of our track. The last I observed the "Albion Star" she was perhaps broad on our starboard bow, that is about 45 degrees, and disappearing in the fog, at a range of perhaps, a distance of, I estimated about 1500 yards. When we had been on the standard speed a minute or two, or whatever it might have been, there was a report of a ship on the port bow and I believe, as I recall, I observed that ship at practically the same instant; that ship [810] developed rapidly, and the first thing that I saw of this ship was a big bow wave, as in a fog something that is white really stands out more than something that is dark. The ship on our port bow was between about a point and a half or two points on our port bow, and as she developed in appearance I observed that she was heading slightly across our bow, maybe as much as 10 or 15 degrees. The captain was standing beside me and his first order was "Hard left, no, no, full right," and that was spoken, those two orders were given within perhaps five seconds of one another, in other words, practically following one another, and that order was immediately followed by the order to back full, back full both engines emergency full speed astern. Prior to the collision, or I would say on the giving of that order full astern, the order was given to sound three blasts on the whistle, indicating that our engines were going full speed astern.

(Deposition of Lloyd Robert Gray.)

Q. You have not got to the collision point.

A. The ship on the port bow later identified as the "Silver Palm" appeared to me to be traveling at least 10 knots at the time, and at the time the collision occurred I estimated her speed still to be at least 10 knots, and her course appeared to me if anything slightly to the left, and our course was going right, and the "Silver Palm" hit us, rammed us forward of the No. 1 turret on the port bow and she plowed into us about up to the amidships line. When I observed there was no chance, there could not be anything else other than a collision, I went out on the port wing of the bridge, and with my hands on the rail I observed the "Silver Palm" plow into us.

Q. Mr. Gray, would it be possible for you to give us the exact distance the "Silver Palm" was from the "Chicago" when you sighted her?

A. No, that is not possible.

Q. Is there any special difficulty in getting the distance of an [S11] object under such circumstances?

A. It is very difficult; on account of the fog it makes it increasingly difficult, and when a ship first comes out of a fog like that, it is very difficult to say, and when your estimate comes first she appears more or less of a blur before you recognize her as a ship, and there is very little to compare distance with.

Q. Did you make any estimate of her distance from you at the time when you sighted her?

(Deposition of Lloyd Robert Gray.)

A. Not at the time. I did a little bit later in re-living it over the next few minutes.

Q. What estimate did you make of her distance from you a few minutes later, as you say?

A. Well, it is an estimate that is rather flexible. It might have been anywhere from 600 to 1000 yards. You could not pin it down any closer than that.

Q. Mr. Gray, you say that you heard the captain give the order, engines full astern, and three blasts sounded? Did you hear any signals from the "Silver Palm"?

A. None.

Q. I do not mean just at that time, I mean at any time that morning?

A. None prior to or at the time of the collision.

Q. How many signals did the "Chicago" blow after sighting the "Silver Palm"?

A. Three blasts for indicating full astern, but I am not certain about any other signals.

Q. Do you know whether the "Chicago's" engines were in fact put astern after the captain gave the order?

A. I did, because I observed the wash of the propellers boiling up around the stern of the ship to approximately amidships, and immediately at the time of the collision or immediately thereafter, the vibration of the hull showed the engines going rapidly astern.

Q. You referred to something about the wash of the propellers. Did you look over the "Chicago's" side at any time?

(Deposition of Lloyd Robert Gray.)

A. I did, yet. As soon as the collision occurred I looked down and saw the wash of the propellers had arrived from the stern up to about [812] amidships.

Q. What do you estimate the "Chicago's" speed was at the moment of collision?

A. Going ahead at a very small amount, probably from two to four knots.

Q. If the propeller water had, in fact, reached amidships prior to the collision, what would that indicate as to her speed?

A. Almost stopped.

Q. Do you recall looking over the "Chicago's" side to look at the water any other time other than that you have just referred to?

A. Oh, yes, plenty of times.

Q. I am not speaking of all the time you have been on the "Chicago", I mean on that morning between the time of sighting the "Silver Palm" and the time of the collision?

A. No.

Q. I wish you would describe how the two vessels reacted under the blow, so far as you can describe it.

A. The "Silver Palm" hit us making an angle of about 40 degrees with our bow, and as she was coming at considerable speed and hit us with all of her vast amount of weight, ripped into our decks and tore a hole in it; the "Chicago" heeled to starboard and took a heavy shock and she turned to right and the "Silver Palm's" stern swung to her starboard such that the two ships, immediately fol-

(Deposition of Lloyd Robert Gray.)

lewing the collision wound up in a position practically parallel to one another, both of them heading in approximately the same direction and at a distance of less than 100 yards.

Q. Mr. Gray, at the time the "Chicago" sighted the "Silver Palm" did you make an estimate of the "Chicago's" speed at that time?

A. What was that again?

Q. Did you, at the time you sighted the "Silver Palm" make an estimate of the "Chicago's" speed at that time?

A. Not at that time, no.

Q. Have you made estimates since then?

A. I have. [813]

Q. Did you make an estimate of her speed at the time that the naval court of inquiry sat, do you know?

A. Yes.

Q. What estimate did you make at that time?

A. As I recall, it was about eleven knots.

Q. What did you base your estimate at that time upon?

A. That estimate was based upon the times as reported in the engine-room bell record sheets, the times that the engines were stopped and put astern, or went ahead, or whatever it might have been, and using that as a basis, and the known orders for acceleration, that is for accelerating the engine revolutions for any given engine signal, using that as a basis and working from data that I had available from the "Louisville," which is a cruiser similar

(Deposition of Lloyd Robert Gray.)

to the "Chicago"—the data that I had from the "Louisville" was taken by that ship on anchoring, using speeds at 15 knots and slowing down at different bell signals—I used that as a basis for my estimate.

Q. Mr. Gray, did you in making this estimate, interview, or talk to any of the men on duty in the engine room?

A. No, not on duty in the engine room.

Q. You did not make inquiry as to what actual engine revolutions were, at any given time during this period of time?

A. No, I just used the written records, that is all I used.

Q. Mr. Gray, what time was used by the "Chicago" during that voyage from San Pedro to San Francisco?

A. We were using 120 meridian mean time.

Q. I will have to admit that I don't know what you mean when you say that.

A. Well, the time is taken using the motion of the earth and sun relative to one another as a basis; the relative motion of the two is not uniform, and therefore we can not build a clock which would keep time as compared to the sun, and therefore they build clocks which keep an average of the sun's time. That is [814] what the clock is. Now in order to have our clocks in any one neighborhood read the same, the earth is divided into zones, and the zone used in this locality is the zone of the 120th meridian, or a zone plus 8 as we call it, and that zone is

(Deposition of Lloyd Robert Gray.)

15 degrees wide and seven and a half degrees of range on either side of the 120 meridian, and that is the zone in which the ship was at the time, and also is the same time as is used in Los Angeles, San Pedro and San Francisco.

Q. Where did you get that time, how did you get it?

A. We carry three chronometers on board which are very accurate, and they are compared by radio time ticks with the time as given out by Washington, which permits us to compare our time with Washington time within less than half a second of error. And we take that time from our chronometers, correcting for the difference in range between here and Washington, which is three hours, and use that time as a basis for our time on board.

Q. Are clocks on board the ship set by the chronometer at any particular hour, is there any rule about that?

A. Not at any particular hour; once a day, and that is done in the forenoon, probably between 8 and 10 o'clock. I had one of the quartermasters go around with a watch which he has compared with the chronometer and correct all the clocks on the ship, and there are quite a number of them.

Q. Do you recall whether or not, on the 24th of October you ordered such comparison to be made?

A. I did. Within perhaps an hour after the collision I thought it wise to get the error of the various ship's clocks that had been used for recording data, and to get the error on them I directed my

(Deposition of Lloyd Robert Gray.)

chief quartermaster to get that data. Whether he took it himself or not I do not know, but the data was submitted to me and I made a memorandum of it at that time, noting the error of the engine room clocks and [815] the bridge clocks.

Q. Have you that memorandum now?

A. I think it is over on that table somewhere.

Q. I mean did you make a memorandum in your own handwriting?

A. I did.

Q. You did not make the comparison of the clocks yourself, though?

A. No.

Q. This was a comparison reported to you by whom?

A. By the chief quartermaster.

Q. By the chief quartermaster?

A. Yes.

Q. Mr. Gray, is there a sal log on the "Chicago"?

A. Yes.

Q. Did you look at the sal log at any time that morning?

A. No.

Q. What is the practice on the "Chicago" about checking the compasses, if there is a practice?

A. It is required that we determine our compass error at frequent intervals, and the practice is at least twice a day, and that error is determined by taking an azimuth of the sun. On that particular day and the day previous the weather was overcast

(Deposition of Lloyd Robert Gray.)

and foggy and the sun was not available at any time. Therefore the only comparison or check made of the compasses was made upon departure from San Pedro, or Long Beach by taking bearings on known ranges.

Q. What can you say as to the condition of the "Chicago's" steering gear and other navigational equipment?

A. The steering gear was in excellent condition. What other navigational equipment do you refer to?

Q. You referred to the fact that you, as navigator, were charged with the responsibility as to the steering gear and other navigational equipment, and I am asking you the question.

A. The other navigational equipment are the chronometers, as to which I checked the errors, the compasses, which I considered to be excellent, and our sextants, which we use for observation. [816]

Q. There is one question I have in mind: Did you pay any special attention to the "Albion Star" after the captain of the "Chicago" had ordered her to turn left?

A. I previously stated that the "Albion Star" turned away and disappeared into the fog on a bearing of about 45 degrees broad on the bow.

Q. Did you glance at her again or did you see her again after the time she disappeared?

A. I did not?

Q. You did not?

A. No.

(Deposition of Lloyd Robert Gray.)

Q. Mr. Gray, I am going to show you another plot. Will you look at this and tell me what it is?

A. That is a sketch of the flag bridge prepared under my direction.

Q. Is that a correct plot?

A. Yes, it was taken from the blue prints in the Navy Yard at Mare Island which constructed the ship.

Q. What about the plot of the navigation bridge?

A. The same that I did of the navigation bridge.

Q. What scale is the flag plot room drawn to?

A. The flag plot or flag bridge scale is two-thirds of an inch to one foot.

Q. Two-thirds of an inch equal to one foot?

A. Yes.

Q. You are writing that in your handwriting on the plot?

A. Yes.

Miss PHILLIPS: I am going to offer in evidence this plan of the navigation bridge and ask that it be marked Government's Exhibit 1-Gray.

(The plan of the navigating bridge is marked "U. S. Exhibit 1-Gray.")

And the plot of the flag plot room, as Government's Exhibit next in order.

(The plan of the flag bridge is marked "U. S. Exhibit 2 Gray.")

Q. Can you state the approximate latitude and longitude of the point at which the collision occurred?

(Deposition of Lloyd Robert Gray.)

A. I have it in my pocket somewhere. May I refresh my memory on the chart over there?

Q. Yes. [817]

A. The latitude was approximately 36-07 north, that is 36 degrees seven minutes north, and longitude was 122 degrees and 17 minutes west. That is the approximate location of it.

Miss PHILLIPS: That is all.

#### Cross Examination

Mr. LILLICK: Q. Will you explain what the sal log is?

A. The sal log is a mechanical instrument for determining the speed at which the ship is traveling through the water and it derives its determination from a metal tube which is projected below the bottom of the ship with a hole in the forward part of it such that as the ship goes ahead, the pressure of the water, due to the speed, forces water into that tube and creates a pressure in it, and through mechanical motion that pressure is translated into speed.

Q. Is there any attachment such as there is upon a barometer from which the mechanical recording is made that is permanent?

A. No.

Q. In other words, to use a sal log you must look at it from minute to minute to know what the ship is doing by the sal log?

A. That is true.

(Deposition of Lloyd Robert Gray.)

Q. And unless a man is stationed to take speed from it, it is of little use except as records are made from observation?

A. That is true.

Q. Was anyone stationed at the sal log, do you know, that morning between 8 o'clock and 8:07?

A. No.

Q. I think the sal log is sufficiently indicated upon one of the charts that you have introduced of the navigating bridge, is it not? Is it indicated upon that?

A. The sal log is located in the chart house on the after bulkhead. It is located back here, it is right back in there.

Q. The witness points to the aft end of the chart house.

A. Approximately at this location. [818]

Q. Where he indicates the position of the sal log. While you were in the chart house did you look at it at all?

A. I did not.

Q. Now as to the gyroscopic compasses, there were two in the pilot house, were there?

A. The gyroscopic compasses themselves are located down below, where they are protected; they are big heavy instruments and what we have in the pilot house are electrical repeaters of what the gyroscopic compass itself is doing.

Q. Is that in any sense what, upon a merchant vessel, is known as a metal mike?

(Deposition of Lloyd Robert Gray.)

A. No, the metal mike is an automatic steering device, it is not a compass.

Q. On the gyroscopic compasses on the "Chicago" was there any mechanical attachment that indicated the course by an arm or a projection with a pencil on it?

A. We had on board what is known as a dead reckoning tracer, and that has a pencil which travels along the chart in the direction in which your ship is traveling, and at a speed which is determined by the revolutions of the engine. It gives a track which will be more or less a true one, except due to any errors or wind or current.

Q. Mr. Gray, on merchant vessels I have seen a gyroscopic record that is so accurate that it traces the course of a vessel to even five degrees. Do you know the instrument to which I refer?

A. We have on the "Chicago" a course recorder, which, if it was in operation, would record the course that the ship was on at any given moment within accuracy of less than one degree.

Q. It was that instrument to which I referred. Did the Sperry gyro course recorder that was on the "Chicago" operate at all from the time you left San Pedro on that particular voyage?

A. No it did not; during the entire time that I was on board the "Chicago" I used it but once.

Q. So that it is not usual to operate with a Sperry gyro course recorder on the "Chicago"?

A. It had not been customary to [819] use it on the "Chicago".

(Deposition of Lloyd Robert Gray.)

Q. Is it not customarily used on other cruisers?

A. I don't know what the custom is, but it is something that would be of little help to me in navigating. It could be used largely as a check of the accuracy of steering of any particular helmsman. But as to giving you any other information it is not of a great deal of assistance, and on the "Chicago" when I relieved Commander Ash as navigator on that ship, he passed word along to me that the captain did not like it because it made too much noise, he had a lot of noises in the chart house anyway, and for that reason, after trying it out once myself and using it, I abandoned its use and did not use it at all.

Q. Had it been in use the morning of this collision we would have been able to have ascertained accurately the degrees to the left that the "Chicago" made when the course was changed from 350 to 330, would we not?

A. Yes. I will add in regard to that instrument that another reason why we did not use it is that it makes a record on a piece of paper, but that record does not come down into visible sight of us until almost an hour later, and that is an additional reason we did not use it.

Q. In other words, it is always used after an event to check with what the other records show, was done?

A. I did not use it at all.

Q. I meant of course when it is used?

(Deposition of Lloyd Robert Gray.)

A. That question is not quite clear to me. I can not give you a very good answer on it.

Q. You testified that when the "Silver Palm", with her great weight, struck the "Chicago" she turned the "Chicago" to the right. What was your estimate of the weight of the "Silver Palm" Mr. Gray?

A. About twelve thousand tons.

Q. And what was the weight of the "Chicago" at that time?

A. About the same, pretty close to 12,000 tons.

Q. How long had you been on watch after leaving San Pedro? [820]

A. I do not stand watch. I was on the bridge from the time we left San Pedro until the time of the collision.

Q. A part of that time you were lying down in the pilot house, were you not, Mr. Gray? In other words, you were not continuously on duty from the time you left San Pedro until the collision?

A. I did not lie down at any time. I was there all the time, available. I sat down but I did not go to sleep.

Q. On the previous day it is my understanding that you were unable to take an observation because it was either foggy or hazy, and that continued during the entire previous day, did it?

A. That is true.

Q. And that morning up to the time of the collision had you seen the sun?

(Deposition of Lloyd Robert Gray.)

A. I will alter that and say it was clear enough to see Anacapa as we passed, but the sky was overcast and the weather was hazy and foggy.

Q. I was not commenting upon your fix, I was only speaking of your ability to take an observation from the sun.

A. It was impossible to take any observation of the sun.

Q. Who set the speed of the "Chicago" at standard 18 knots when you left the formation that morning?

A. That I don't know. I don't know whether the captain set it or the admiral set it, I could not tell you.

Q. In any event, you were running, from the time you left the formation, twelve knots and then up to standard at 18?

A. Yes.

Q. Do you know how long prior to 8 o'clock you had attained a speed of 18 knots?

A. Well, we left the formation, as I recall, at 7:27 and it would take perhaps 15 minutes to work up to 18 knots under those conditions.

Q. Would it be a fair statement that in your opinion by 7:45 that morning you were running at 18 knots?

A. That would be a fair statement, yes. [821]

Q. And when the first whistle was reported to you, and the captain, from the "Albion Star" the "Chicago" was making 18 knots then, wasn't she?

A. Yes.

(Deposition of Lloyd Robert Gray.)

Q. Is it true that when that whistle was first reported the "Chicago's" signal to the engine room was two-thirds speed from standard?

A. As I recall it was two-thirds and then immediately followed by stop, all in the time of probably less than a minute.

Q. So that the first order was two-thirds, and then in something less than a minute the order stop was sent down to the engine room?

A. Yes.

Q. Would you give us your best estimate from recollection, without regard to what the engineer's bell book indicates, as to the time that elapsed between the two-thirds order about 8 o'clock, and the stop order?

A. No, I could not.

Q. Would you state it would be a pure guess on your part?

A. Yes.

Q. Let us take it from the time that you were standing with the captain as I understand you were, in the chart house,—

A. No, the pilot house.

Q. The pilot house, when the report came in to you of the whistle that had been heard on the star-board beam. Do you remember when the captain signaled to the engine room two-thirds speed, where he was when he gave that order?

A. Prior to the hearing or reporting of these fog signals, we were in the chart house, and when they

(Deposition of Lloyd Robert Gray.)

were reported we both proceeded to the pilot house.

Q. Was the two-thirds speed order given after you had moved out of the chart house?

A. Oh, yes.

Q. What I am trying to get is, where the captain was when he ordered two-thirds speed.

A. Looking out the window of the pilot house.

Q. And that order was given to whom?

A. That order was given to the officer of the deck. [822]

Q. And the officer of the deck in turn gave the order to whom?

A. There was a man standing by the engine telegraph and he executed the order. That is to the best of my recollection.

Q. That is all I want, Mr. Gray, just the best of your recollection. Where was the captain when he gave the stop order, was he in the same position as he was before?

A. The same position.

Q. You were beside him then, were you?

A. Yes.

Q. Were you standing at an open window?

A. At an open window, yes.

Q. Between the time that he gave the order two-thirds and the time of the stop order did you hear any whistles from "Albion Star"?

A. I do not recall that. We had been hearing the whistle of the "Albion Star"—well, I could not say

(Deposition of Lloyd Robert Gray.)

that either—we heard the whistles of the “Albion Star” after I came into the pilot house.

Q. And before the two-thirds order was given, do you mean?

A. Did you say before?

Q. Yes.

A. Oh, yes.

Q. How long would you think before?

A. That would be hard to estimate, a matter of a few seconds.

Q. Then after the stop signal was given do you know how long after that it was until the next order went down to the engine room?

A. No, not of my own knowledge. I know there was an appreciable time.

Q. I would like your best estimate if you are able to remember it, the best you can.

A. That is from the stop order?

Q. To the next order after that.

A. To the next order?

Q. Yes.

A. Well, it is very difficult to give you any estimate, due to just recalling the circumstances; I was seeing the time so much, that my estimates of those times is now practically based upon those records that I have seen, I imagine.

Q. In all fairness it would be impossible for you to recollect, and [823] I want to get your best recollection away from the records, if I can. Is it fair to say that, with your present inability to fix

(Deposition of Lloyd Robert Gray.)

the time, you are of the opinion that the engine bell book records would be a more accurate record of the times those orders were received in the engine room than your recollection of the orders from the bridge?

A. The average of those times would certainly be more accurate than any recollection I could give you.

Q. Using your phraseology, "the average of those records," is it that you say the average of the records to account for the variability due to varying individual quickness in executing orders and recording them: Is that what you mean?

A. That would account for part of it, and also the fact that those times are taken to the nearest minute, and therefore two people might read the same clock and might get two different readings at which either signal was ordered.

Q. In actual fact, dealing with different men, as a matter of fact, one man in the engine room at the throttle, a quick, nervous, temperamental man would be more apt to execute an order promptly than a phlegmatic, slow individual: that would be true?

A. That is possible.

Q. Will you give me your best judgment as to the speed of the "Chicago" considering that at 8 o'clock she was proceeding at 18 knots an hour, and from your recollection of the time that elapsed between the two-thirds order and the stop order and the next

(Deposition of Lloyd Robert Gray.)

two-thirds order, at what speed she was going at that second two-thirds order?

A. Well, my best estimate on that is, which I based, as I said once before, on taking the average time of the records, was between four and five knots.

Q. One of the reasons I have asked you, Mr. Gray, is because, on direct examination it was your testimony that, in your opinion, she was going at a rate of speed of from two to four knots at [824] the time of the collision. Working back from the time of the collision to the second order of two-thirds, the answer just given by you was at that time she was going between four and five knots an hour. Now if at that time she was going at between four and five knots an hour, and the two-thirds order ahead was given at 8:02.4, and 8:03.4 the standard speed was ordered, at what speed would you say the "Chicago" was going at 8:06?

A. About eleven knots. My estimate there is based upon the acceleration orders that they have in the engine room, which state that in increasing speed, that in any one minute for that boiler power, that they shall increase the revolutions of the engines five knots in the first minute, five knots in the second minute, and five knots more in the third minute, and every minute thereafter one more knot, which brings them up slowly, you understand, rather that brings them up quickly.

Q. Then if at 8:02.4 the engines were ordered two-thirds ahead, and at that time engines were at

(Deposition of Lloyd Robert Gray.)

a speed of approximately four knots, and one minute later, 8:03.4 they were ordered at standard, for the first time under two-thirds the "Chicago" would have increased at what speed would you say?

A. Immediately following that order the ship was still slowing down because the ship was slowing, due to her momentum, due to the negative acceleration, and in addition to that you have the drag of the propellers because the propellers are still turning over at a speed less than the ship is actually making; therefore they are acting as a drag. For that reason the speed of the ship must still drop off for perhaps half of that first minute after the two-thirds order is given.

Q. Under the circumstances that morning, bearing in mind that at 8 o'clock the engines were turning over at a rate of 173 revolutions per minute, wouldn't that have been somewhat compensated [825] by the coasting, if you wish to use that term, since they had been brought down then to two-thirds and then to stop?

A. I do not understand what you are asking.

Q. You have just stated that she would pick up slowly. She went down from 8 o'clock in the same relative degree, did she not?

A. No.

Q. Then with only minute intervals involved, is it not true that the action of the various men in the engine room is a very vital factor in the actual operation of the four propellers?

(Deposition of Lloyd Robert Gray.)

A. I still can not answer you. I can not understand what you are asking.

Q. With minute intervals involved as we are discussing now, the minute between 8:02.4 and 8:03.4 in your estimation, would not the action of the four men at the throttles in the engine room be a very vital factor in coming to a conclusion as to the speed?

A. Oh, sure, certainly.

Q. Let us assume that at 8:03.4 the engines were ordered ahead standard, and with your knowledge of what went on as you were on the bridge that morning, and assuming also that the next order was rung down to the engine room at 8:06, two and a half minutes afterward, can you give me your estimate of the speed of the "Chicago" at 8:06?

A. The only estimate that I have made, as I have said before, was based upon the average of the engine room times and known acceleration, and the "Louisville" data, and with that in view I did estimate that speed to be, as I recall it, around eleven knots.

Q. After you had the engines stopped, when you heard the "Albion Star's" whistles, what signals were blown on the "Chicago"?

A. There was a three blast, indicating that her engines were going full speed astern.

Q. May I remind you, Mr. Gray, that it is my understanding that after you heard the engines ordered to stop, after hearing the [826] "Allion

(Deposition of Lloyd Robert Gray.)

Star's" whistle, that signals were blown from the "Chicago" before the "Silver Palm" was seen?

A. Before the "Silver Palm" was seen?

Q. Yes, those are the signals to which I refer.

A. While we were proceeding, immediately prior to sighting the "Albion Star" we had been sounding one blast every minute, one prolonged blast, and as I recall, after the engines were stopped we sounded two blasts, and then following that, after the sighting of the "Silver Palm", three blasts, that the engines were going astern.

Q. That is what I wished to ask you about, the two-blast signal blown after the engines were stopped. Do you recall how many of those two-blast signals were blown?

A. I do not.

Q. Do you remember whether, after blowing two-blast signals, you went back to blowing fog signals before the "Silver Palm" was sighted.

A. As I recall it, we did.

Q. Can you tell me how many of those signals were blown?

A. No, I can not.

Q. In your estimate of the speed given when you testified before the court of inquiry, did you prepare a diagram of the situation then?

A. I did.

Mr. LILLICK: May I see it if you have it, Miss Phillips?

Miss PHILLIPS: I thought it was here, but I have sent for it.

(Deposition of Lloyd Robert Gray.)

Mr. LILLICK: Is the tachometer the same thing as the sal log?

A. That is part of the sal log.

Q. It has been called to my attention, for the reason that in the rough log appears, after the entry "0800, Pit log, no reading", and that pit log so referred to is a part of the sal log?

A. It is undoubtedly what he is referring to there. I will add, relative to that sal log, that it not only gives a direct reading as to the speed at the time, but it also gives a record of the [827] distance.

Q. In your estimate of 11 knots at the time the "Silver Palm" was seen, and using the engineer's bell record, how did you interpret those bell records with respect to time? That the throttle man had put down the time as the orders came over to the engine room telegraph, or that it represented the time that they executed the order on the engine, or the time they entered the record in the bell book?

A. I naturally assumed that that time that was entered there was the action of the engines.

Q. In order to make it certain the times that you used in making your computation of the engineer's bell book, was the average time of the four engines as I understand it?

A. That was the average time of the four engines, corrected for known error, the known errors which I ascertained by establishing the approximate error.

(Deposition of Lloyd Robert Gray.)

Q. And by known errors, you mean the clock errors?

A. Known clock errors.

Q. Did you sight the "Silver Palm" while the "Albion Star" was still in view, or rather still in your sight?

A. That would be rather hard for me to answer because I think she was, but I am not certain, she was just about,—one was fading out and the other was just about coming it.

Q. Were you looking at the "Silver Palm" when the order full astern was given on the "Chicago" if you remember?

A. Yes.

Q. Do you remember what time that was?

A. I do not.

Q. Do you remember how far away the "Silver Palm" was when that full astern order was given?

A. My estimate of the distance was about 700 yards, but it might be 200 yards up or down.

Q. As a matter of fact, with the fog, you said in your direct examination, it was very difficult indeed to judge the distance?

A. Yes. [828]

Q. We have had testimony, Mr. Gray, with respect to which way the "Silver Palm" seemed to change her course before the collision, and after she came into sight. I understand your testimony is that to you she seemed to be changing to the left of your course?

(Deposition of Lloyd Robert Gray.)

A. To her left, if anything.

Q. To her left; in other words, that her course was on a port helm instead of on a starboard helm?

A. No.

Q. Correct me.

A. You are perhaps confusing what helm is. In order to have a ship go to the left, her helm is right or starboard helm.

Q. I was assuming that direct orders were given to the helmsman, that is the reason. Let us put it differently. Am I stating it correctly that it is your opinion that prior to the time the "Silver Palm" and the "Chicago" came into collision, the "Silver Palm" seemed to be turning toward her left?

A. Toward her left if anything at all.

Q. When you first saw her, did her masts seem to be in line?

A. No, her masts appeared slightly open, just as though she was crossing our bow to a small extent, 10 or 15 degrees, perhaps.

Q. In other words, her foremast to the right and her after mast to the left?

A. As viewed from our position, that is correct.

Q. On the diagram No. 1 will you give me the difference between the flag speed indicator, and the speed indicator, if there be a difference. One is marked "Flag speed indicator" as I get it. I may be in error about that "flag speed indicator" and the other speed indicator. Is there any difference between the two instruments?

(Deposition of Lloyd Robert Gray.)

A. Yes. The speed flag indicator is a means that is always used in formation when we are with other ships. It is for transmitting an order. A man who is on the signal bridge, standing by a speed flag, whenever we make a change of speed he hoists a little signal which signifies to any ship [829] in sight of us, a naval ship, that we are traveling at a certain speed. This speed indicator on the port side of the bridge is the means of transmitting to the engine room the revolutions that were desired to have made by the engines.

Q. I think you said that you noticed that the "Albion Star" changed her course after you saw her. Which way did she change her course?

A. As I recall, to her right, in other words, to get out of our track.

Q. Would you say that you might have formed that impression because of your own change of course to the left and your having noticed later that she seemed to be bearing off to your right?

A. That is possible.

Q. Of course you don't know what course she was steering when you first saw her?

A. No, I do not.

Q. And as to all of these times you have no personal record of them?

A. I know the "Albion Star's" course perhaps within 10 degrees because she was on a course paralleling ours and crossing our bow to a small extent, perhaps 10 degrees, which would make her course probably 340.

(Deposition of Lloyd Robert Gray.)

Q. Can you tell me, whether, as navigating officer, and standing beside the captain as you were, the order to change your course from 350 to 330 and the order two-thirds speed and standard speed were intended to have you catch up and pass the "Albion Star"?

A. They were intended to avoid her and pass her, inasmuch as we were traveling at a higher rate of speed than she was; that is, we had been traveling at a higher rate of speed than she was.

Q. And to continue traveling at that rate of speed?

A. Yes.

Q. And that was your order, was it not, that morning, to proceed at standard speed of 18 knots?

A. The order was not given by me at all. I know we had been traveling at that speed.

Q. And they rang on that speed again?

A. And we undoubtedly [830] intended to continue on that.

Q. Can you tell me whether, when you sighted the "Silver Palm" you personally knew whether the course had been changed to 330 degrees, that is whether you finally had steadied up on that course?

A. I don't know that directly.

Q. Which followed the other, the order to change course or the order full astern?

A. The order full astern followed the order to change course.

Q. You personally don't know what time the actual impact occurred, do you?

A. No, I did not take any record myself.

(Deposition of Lloyd Robert Gray.)

Q. At no time during all this period from 8 o'clock until the collision did you look at a watch?

A. I did not look at any watch.

Q. Can you tell me when the order was given to the engineering force as to the use of the accelerating table that was in use that morning?

A. No, that is one that had been in use for some time, that is all I can say.

Q. You started from San Pedro that morning with a standard table of acceleration in the engine room?

A. Yes.

Q. So there was no specific order about it that day?

A. I believe that to be true.

Q. This again is an estimate; from your knowledge of the "Chicago" is it your opinion that if the "Chicago" was proceeding at 18 knots an hour and the engine room was signaled at 8:01 to stop, that the "Chicago" in two minutes would have lost 14 knots speed without any further order to the engine room?

A. Might I ask where you got those figures?

Q. I am simply assuming the time, Mr. Gray, a pure hypothetical question.

Miss PHILLIPS: I believe I will make an objection there. I do not believe that the witness is qualified to answer that. He is not an engineering officer and I doubt whether he has been [831] long enough on the "Chicago" to reach a conclusion that would be helpful to the court.

(Deposition of Lloyd Robert Gray.)

Mr. LILLICK: To save time I ask the witness for his answer for whatever it may be worth, in view of the fact that he was the navigating officer of the "Chicago" on that morning.

Miss PHILLIPS: I make the objection and the court can rule upon the objection.

Mr. LILLICK: Will you give me your best opinion?

A. Might I look at that sketch to refresh my memory?

Q. Certainly.

A. Might I remark before replying to that, that that does not tell all the situation as it existed?

Q. Answering your remark I base it upon nothing more than the assumption that I made that she was proceeding at 18 knots an hour and a stop bell rung to the engine room, and proceeding coasting, if you care to use that term, for two minutes, in your opinion, what speed would she be making at the end of two minutes?

A. I will answer your question indirectly, stating that my calculated estimate that I previously made is in three minutes after that stop bell I estimated that she had lost some 14 knots from 18 knots.

Q. So that in two minutes she would have lost how many?

A. In two minutes she would have lost approximately nine knots.

Q. In other words, would have been going at the rate of nine knots an hour at the end of two minutes?

A. Yes.

(Deposition of Lloyd Robert Gray.)

Q. Mr. Gray, from your experience on the "Chicago" would you be able to tell me approximately what time would elapse if the engines on the "Chicago" were running at 173 revolutions a minute before they would be reversing at 110 revolutions a minute?

A. If full emergency astern were rung?

Miss PHILLIPS: I think the witness is not qualified to answer that question and I make objection on that ground.

Mr. LILLICK: I am asking if he can tell me.

A. No. [832]

Q. The calculations that you made with respect to the speed were based upon data supplied to you from records?

A. Yes.

Q. Mr. Gray, at the hearing before the court of inquiry you were asked whether the "Chicago" was still swinging left when the "Silver Palm" was sighted and you there testified that yes, the steersman was meeting her with right rudder at that time. Reminding you of that, can you tell me whether you now remember that she was still swinging to the left?

A. I will state that my statement made at that time was based from information or from conversations that I had had with the steersman, as I recall it, to the effect that he was meeting her.

Q. From where you were standing you could not tell whether the "Chicago" swung one way or the other?

A. No, I would say no.

(Deposition of Lloyd Robert Gray.)

Q. Were you in a position to see what the helmsman was doing with his wheel?

A. No, I did not observe what he was doing with his wheel.

Q. At the hearing before the board of inquiry you testified with respect to the visibility from 8 to 8:10. I think you have not been asked that today. You then testified that the visibility was from 1000 to 2000 yards, the next minute 500 yards, when the "Silver Palm" was sighted, from 700 to 800 yards. Would you still say that is a fair statement of the visibility?

A. Yes, I would say so.

Q. Do you know the turning radius of the "Chicago" proceeding at 18 knots?

A. It all depends upon the amount of rudder that is used. On full rudder, what we call standard rudder for 15 knots it is 1000 yards, and standard half rudder it is 1000 yards, and at half rudder it is 1000 yards and standard rudder is 750 yards, and for full rudder is about 650.

Q. To put it briefly if you will give me an answer, if you can, to these questions, with full right rudder proceeding at a speed of 18 knots an hour, what is your estimate of the radius of [833] the circle that the "Chicago" would make?

A. The radius?

Q. Yes.

A. The radius is about 400 yards, in diameter about 800 yards.

(Deposition of Lloyd Robert Gray.)

Q. And the same question as to right rudder proceeding at 11 knots an hour?

A. Less than that, probably a radius of 325 and a diameter of 650.

Q. When was it as to distance from the "Silver Palm" that you first came to the conclusion that the collision was inevitable?

A. As soon as I observed her course and speed, which was as soon as the ship developed in form.

Q. Now as to distance, what would you say that distance was?

A. I should say that distance was 600 yards.

Q. And that was almost immediately after she came out of the fog?

A. In other words, as soon as she developed.

Q. In your opinion, Mr. Gray, if Captain Kays had not countermanded this order of full left rudder, would the ship not have passed the "Silver Palm" starboard to starboard without colliding?

A. No.

Q. If, without having ordered full left rudder he had ordered full right rudder, would the two vessels have passed port to port?

A. No.

Q. If, at the time you first saw the "Silver Palm" she was actually under a hard starboard rudder, is it not the only explanation of her seeming to turn to the left the fact that the "Chicago" herself was proceeding to the left of the "Silver Palm" bodily?

(Deposition of Lloyd Robert Gray.)

A. I can not answer that because I know of my own observation that the "Chicago" had the "Silver Palm" on her own port hand, and therefore such a situation could not have existed.

Q. Except for the fact, as I understand it, that where a vessel has an order full right rudder given her, she would bodily move over to the left, and a vessel the size of the "Chicago" sometimes to the extent of 50 yards—bearing that in mind, would you still [834] not say that the explanation is that the "Chicago" was moved bodily over to the port?

A. No, I would not say that. I could best illustrate that.

Q. If you would care to you may, otherwise I do not care to have you?

A. No.

Q. Mr. Gray, I hand you the analysis of the speeds of the "Chicago" when in collision with the steamer "Silver Palm" on October 24, 1933, or so described in the legend upon the blueprint, and ask you whether that is a blue print prepared from some sketches by you, taking into consideration the average speeds that you took from the engine bell book, and the tactical data obtained by you from the "Louisville," with such other data as you had in making this up, which you may give, if you care to, separately, of the position of the "Chicago" and her speed from time to time, and at the time of the collision?

(Deposition of Lloyd Robert Gray.)

A. That is true with the exception that you made mention of speeds taken from the engine-room bell book. If you state revolutions, that is true.

Mr. LILLICK: We offer the blue print in evidence as respondent's Exhibit 1 Gray.

(The document was marked "Respondent's Exhibit No. 1 Gray.")

#### Redirect Examination

Miss PHILLIPS: Might I ask you, there are corrections written in on the exhibit you have just offered. I want the commander to state whether he made those corrections. I do not want it said that somebody changed it afterwards.

Mr. LILLICK: I will be glad to have you do so.

Miss PHILLIPS: Mr. Gray, I observe at the bottom of this exhibit some figures written in red. Are those your figures?

A. They are.

Q. I just did not want it to appear that somebody else had made those afterwards. I have just one or two questions more, Mr. Gray. What [835] interval, if any, occurred between the order to the right after sighting the "Silver Palm" and the order to back? Can you, or can you not estimate the interval?

A. One immediately followed the other.

Q. You have said that you used data from the "Louisville" and other tactical data to make up this estimate. What other tactical data did you mean?

(Deposition of Lloyd Robert Gray.)

A. I do not recall just what it was at the present time, although I did use some other data.

Q. What tactical data, from the "Louisville" did you use?

A. Her curve submitted by that ship to other cruisers, of deceleration of the ship due to various slowing and stopping signals approaching an anchorage from a speed of 15 knots.

Q. I am still on the track of what other tactical data. Could you mean by that, tables of speed for engine revolutions, theoretical tables.

A. Oh yes, I would use them certainly.

Q. Would you have in mind too, standard acceleration and deceleration tables?

A. I had them in mind, too.

Q. I can not think of anything else that you might have had in mind. I wonder if you can think of anything else. Is there nothing else that occurs to your mind?

Mr. LILLICK: Ask him the question directly.

Miss PHILLIPS: I don't know. I can't think of anything else he could have had in mind.

A. I do not recall at the present time what I did use in addition to that.

Q. Do you know what signals were rung when the full astern order was given?

A. The engine telegraph.

Q. Whereabouts was the engine telegraph located on the plot?

A. It is immediately abaft where the captain was standing.

(Deposition of Lloyd Robert Gray.)

Q. How is the engine room telegraph rung down?

A. How is it rung? [836]

Q. Yes.

A. There are handles on there, that you swing back and forth sufficiently to ring gongs or bells in the engine room, and also a visual pointer that indicates what speed is desired, whether it is one-third, two-thirds, stop or full speed.

Q. It is a mechanical device?

A. It is a mechanical electrical device.

Q. Does it ring orders to both engine rooms simultaneously?

A. All engine rooms simultaneously.

Q. Mr. Gray, looking at this exhibit, your sketch, which is marked Respondent's Exhibit 1 Gray, I observe that you have on this the engine revolutions, which you have indicated were 150 revolutions ahead at the time about the full astern order was given. Do you know in fact the engines were going that much ahead?

A. No. That was taken from what was supposed to be the revolutions for a single speed; in other words, if standard speed is 18 knots, 173 revolutions, when they rang up standard speed would be 18.

Q. You said something about that you could make a sketch showing the movement of the ship when a rudder order is given. I am not going to ask

(Deposition of Lloyd Robert Gray.)

you to make a sketch unless you do not approve or agree with the sketches given in Knight in Seamanship on Plate 114, facing page 331 in the 8th edition. Is that what you had in mind when you said you could make a sketch?

A. That is part of what I had in mind.

Q. If you had anything more in mind I guess we had better have it.

A. I agree with the fact that a ship has a certain amount of relative motion to the left in making a right turn, but I do not agree that that makes the ship appear to be making a left turn, inasmuch as the line of the ship being such, even though the ship may turn somewhat to the left in making a right turn, still this ship here—

Q. Mark it “Silver Palm”. You are just pointing out there, and it will not show in the record.

A. That is not comparable to [837] the “Silver Palm” making a left turn in which her heading is left. What you were driving at was this, if the “Silver Palm” is there and we came in a movement to the left, it would make her open out this way, whereas, the “Silver Palm” being in that direction there, the relative motion of the “Chicago” slightly to the left is still on the port bow of the “Silver Palm.”

Mr. LILLICK: I understand that. Will you mark that “Silver Palm” and the other the “Chicago”?

A. Yes.

(Deposition of Lloyd Robert Gray.)

Miss PHILLIPS: I offer that in evidence as our exhibit next in order.

(The diagram is marked "U.S. Exhibit 3 Gray.")

Mr. LILLICK: Q. From where did you get the radio bearings about which you testified?

A. We obtained on the way north many radio compass bearings from Point Arguello which gave us a fairly accurate position off Arguello and rounding Arguello and Concepcion, and after that time we obtained radio compass bearings from Farallones, Pt. Reyes and Montara, which bearings are of little, very little, value because they do not cut sharply, and the distance is large, and furthermore those bearings are parallel to the coast, and when radio compass bearings are parallel to the coast their value is very much less, and their accuracy is considerably detracted from.

Mr. LILLICK: That is all.

Miss PHILLIPS: That is all.

(Certificate of Notary)

Filed March 27, 1934. [838]

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MERLE JAMES VERICK,

called for the United States, sworn: (Taken before Erwin M. Cooper, Notary Public, San Francisco, pursuant to stipulation of counsel.)

Miss PHILLIPS: Will you please give your full name?

A. Merle James Verick.

(Deposition of Merle James Verick.)

Q. What is your business?

A. At present it is fire control man.

Q. In the employ of the city government, or what?

A. In the U. S. Navy.

Q. How long have you been in the navy?

A. It will be seven years this April.

Q. What is your present rank?

A. Seaman first class.

Q. How long have you been in that rating?

A. Since October, 1927.

Q. Are you attached to any ship?

A. Yes.

Q. What ship?

A. The U.S. "Chicago."

Q. How long have you been attached to the "Chicago"?

A. Since October 5, 1933.

Q. Were you on board at the time of the collision of the "Chicago" with the "Silver Palm"?

A. I was.

Q. Were you on duty?

A. I was.

Q. Where were you stationed?

A. On the bridge port fog lookout.

Q. What part of the bridge?

A. Port side.

Q. When did you go on duty?

A. About five minutes to eight.

Q. Did you see the collision?

A. I did.

(Deposition of Merle James Verick.)

Q. I would like you to go back and tell us what you saw, beginning about the time you came on duty, and tell us what you know.

A. I went on duty about five minutes to eight in the morning, and shortly after I went on watch the "Albion Star" was on our port hand, and the bow lookout reported it to the bridge, and as they reported it, a few minutes after they reported it I took about three steps back and I saw it, saw just part of the stern of it, and after that we made a left hand turn. I do not know what the degrees of the turn, or anything like that were, but we made a [839] left turn and right after we completed the turn the "Silver Palm" came in view; I do not know how far off she was at the time but she came in view and then we started backing down, and the "Silver Palm" at that time was making a left turn, because I could see her starboard side, I could not see her port side. At that time I glanced down at the water and I judge we were making about three or four knots, something like that, and after the "Silver Palm" came in closer, it was about 400 feet, I should judge, I looked down at the water again and we were at a standstill and it was not long then until she tore into us.

Q. You referred to the "Albion Star." What side of the "Chicago" was she on?

A. She was on our starboard side.

Q. I believe when you first related your account, you said on your port hand. Did you mean that?

(Deposition of Merle James Verick.)

A. No, the "Albion Star" was on our starboard side. The "Silver Palm" came on our port.

Q. You say when the "Silver Palm" was about 400 feet away, you think the "Chicago" was at a standstill. What makes you think so?

A. Because I looked down at the water and you could see the propellers had stopped then, and the rush of the water coming forward, it only comes up to about the center line of the ship, and it was up there.

Q. Do you know where the "Chicago's" propellers are located?

A. Yes.

Q. Whereabouts?

A. In the stern. There are two on each side; we have a propeller guard that is right over the forward propellers and after ones, just a little after that, and I judge it is about 40 or 50 feet from the stern.

Q. When was the last time you looked over the "Chicago's" side prior to the collision?

A. The "Silver Palm" was about 400 feet from us then.

Q. Do you know whether the "Chicago's" engines were in reverse? [840]

A. Yes.

Q. How do you know it?

A. Because you can tell by the vibration of the ship; right after we sighted the "Silver Palm" we started backing.

Q. Did you hear any whistles that morning?

A. Yes.

(Deposition of Merle James Verick.)

Q. What whistles?

A. Three short blasts, backing down.

Q. From what ship?

A. From the "Chicago."

Q. Did you hear any whistles from the "Silver Palm"?

A. I did not at any time. The "Albion Star," I heard her. That is the only one I heard.

Miss PHILLIPS: You may cross examine.

#### Cross Examination

Mr. LILLICK: Q. What time did the bow lookout whom you relieved, leave the bow?

A. I did not relieve the bow lookout, I relieved the port fog lookout.

Q. I am in error. I put it in my notes that you were the bow lookout.

A. Fog lookout on the bridge.

Q. On which side of the bridge were you standing?

A. On the port side.

Q. And directly in the wing?

A. Directly in the wing. There is a little corner there, I was right next to the corner.

Q. You relieved whom?

A. I relieved a fellow by the name of Shields, who has been discharged from the navy.

Q. You mean he had served out the full length of his enlistment?

A. No, he had a bad conduct discharge.

(Deposition of Merle James Verick.)

Q. What time did he leave the bridge?

A. Immediately after I got there, I judge it was five minutes to eight.

Q. So that he left the bridge at 7:55?

A. 7:55 would be all right.

Q. How many whistles did you hear from the "Albion Star"? [841]

A. I don't remember now. I heard her several times as she was passing, but I never heard any from the "Silver Palm."

Q. You stated you heard several from the "Albion Star" after she was passing. Did she come up and go by?

A. No, not after she passed. She passed right along, parallel with us.

Q. How far away was she?

A. I don't know, I would not say.

Q. You have given us the distance from the "Chicago" of the "Silver Palm" at one time.

Miss PHILLIPS: I beg your pardon, not at the time of sighting.

Mr. LILLICK: I have not finished my question.

Miss PHILLIPS: Withdraw it.

Mr. LILLICK: Q. (Continuing) —as 400 feet. Did you make no estimate of the distance between the "Chicago" and the "Albion Star" at any time?

A. At no time.

Q. Was the fog out in the direction in which the "Albion Star" was?

A. The fog was settling down pretty bad over the whole area where we were.

(Deposition of Merle James Verick.)

Q. So that fog was completely around the ship out toward the "Silver Palm", was it?

A. All around us, and we were in a bad place, I guess, that is all.

Q. With reference to the "Silver Palm" when you first saw her, did she look like a blur in the fog?

A. She did when she first came into view.

Q. That was because of the density of the fog, you did not see her come out of the fog bank all at once, but just gradually come out of a heavy fog?

A. Yes.

Q. Can you give me no idea of how far away she was when you first saw her?

A. I have no idea at all. If I would say I would probably be wrong either way.

Q. Do you know how long the "Chicago" is, what her length is?

A. She is about 585 feet. [842]

Q. Now speaking in terms of the length of the "Chicago", when you first saw the "Silver Palm" would you say that she was three times as far away as the ship length of the "Chicago" or five times her length away, measured in ship lengths?

Miss PHILLIPS: Just a moment. I am going to object to that. The witness has said he did not know, and certainly he is not qualified to answer a question such as you have put to him.

Mr. LILLICK: Q. Would you say that she was one ship length away?

A. I would not say either way, because I don't know.

(Deposition of Merle James Verick.)

Q. Then you are not willing to attempt to tell me of any estimate of ship lengths away?

A. No, I would not, because I would probably be over or under, and I would not say, because the chances are I would be wrong either way.

Q. You could tell me whether she was ten ship's lengths away, can't you?

Miss PHILLIPS: I renew the objection I have made.

A. I couldn't say, because in hazy weather it is hard to tell. You have got no good visibility.

Mr. LILLICK: Comparing the distance the "Albion Star" was away from the "Chicago" that morning, when the "Silver Palm" first came into your view, would you say that she was as far away then as the "Albion Star" was?

A. No, the "Albion Star" was closer.

A. The "Albion Star" was closer?

A. She was closer to us at the time we made our turn.

Q. At the time when you made the turn?

A. That is the nearest point was the time when we made our turn, that is the "Albion Star."

Q. You made that turn in order to get away from the course of the "Albion Star"?

A. Yes.

Miss PHILLIPS: Just a moment, this is not proper cross examination. I have not questioned the witness upon the course of the "Chicago" or upon the navigation or orders given to the helm [843] or anything of that sort.







